

# Package ‘radiant.model’

January 8, 2018

**Type** Package

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

**Version** 0.9.0

**Date** 2018-1-8

**Description** The Radiant Model menu includes interfaces for linear and logistic regression, naive bayes, classification and regression trees, neural networks, model evaluation, collaborative filtering, decision analysis, and simulation. The application extends the functionality in radiant.data.

**Depends** R (>= 3.3.0),  
radiant.data (>= 0.9.0)

**Imports** radiant.basics (>= 0.9.0),  
shiny (>= 1.0.5),  
nnet (>= 7.3.12),  
NeuralNetTools (>= 1.4.0),  
sandwich (>= 2.3.4),  
car (>= 2.1.3),  
ggplot2 (>= 2.2.1),  
gridExtra (>= 2.0.0),  
data.tree (>= 0.7.3),  
stringr (>= 1.1.0),  
pryr (>= 0.1.2),  
lubridate (>= 1.7.1),  
tidyr (>= 0.7.2),  
dplyr (>= 0.7.4),  
rlang (>= 0.1.6),  
magrittr (>= 1.5),  
DiagrammeR (>= 0.9.2),  
import (>= 1.1.0),  
psych (>= 1.6.6),  
e1071 (>= 1.6.8),  
rpart (>= 4.1.10),  
rstudioapi (>= 0.7),  
yaml,  
methods

**Suggests** testthat (>= 2.0.0)

**URL** <https://github.com/radiant-rstats/radiant.model>

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

**License** AGPL-3 | file LICENSE

**LazyData** true

**RoxygenNote** 6.0.1

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## Description

Artificial Neural Networks

## Usage

```
ann(dataset, rvar, evar, type = "classification", lev = "", size = 1,
     decay = 0.5, wts = "None", seed = NA, check = "standardize",
     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
rvar	The response variable in the model
evar	Explanatory variables in the model
type	Model type (i.e., "classification" or "regression")
lev	The level in the response variable defined as <code>_success_</code>
size	Number of units (nodes) in the hidden layer
decay	Parameter decay
wts	Weights to use in estimation
seed	Random seed to use as the starting point
check	Optional estimation parameters ("standardize" 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/model/ann.html> for an example in Radiant

## Value

A list with all variables defined in `ann` as an object of class `ann`

## See Also

`summary.ann` to summarize results

`plot.ann` to plot results

`predict.ann` for prediction

## Examples

```
result <- ann("titanic", "survived", c("pclass","sex"), lev = "Yes")
result <- ann("titanic", "survived", c("pclass","sex"))
result <- ann("diamonds", "price", c("carat","clarity"), type = "regression")
```

---

auc	<i>Area Under the Curve (AUC)</i>
-----	-----------------------------------

---

**Description**

Area Under the Curve (AUC)

**Usage**

```
auc(pred, rvar, lev)
```

**Arguments**

pred	Prediction or predictor
rvar	Response variable
lev	The level in the response variable defined as <code>_success_</code>

**Details**

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

**Value**

AUC statistic

**See Also**

[evalbin](#) to calculate results  
[summary.evalbin](#) to summarize results  
[plot.evalbin](#) to plot results

**Examples**

```
auc(runif(nrow(mtcars)), mtcars$vs, 1)
```

---

catalog	<i>Catalog sales for men's and women's apparel</i>
---------	--

---

**Description**

Catalog sales for men's and women's apparel

**Usage**

```
data(catalog)
```

**Format**

A data frame with 200 rows and 5 variables

**Details**

Description provided in attr(catalog,"description")

---

cf	<i>Movie ratings</i>
----	----------------------

---

**Description**

Movie ratings

**Usage**

```
data(cf)
```

**Format**

A data frame with 110 rows and 4 variables

**Details**

Use collaborative filtering to create recommendations based on ratings from existing users. Description provided in attr(df,"description")

---

confint_robust	<i>Confidence interval for robust estimators</i>
----------------	--

---

**Description**

Confidence interval for robust estimators

**Usage**

```
confint_robust(object, level = 0.95, dist = "norm", vcov = NULL, ...)
```

**Arguments**

object	A fitted model object
level	The confidence level required
dist	Distribution to use ("norm" or "t")
vcov	Covariance matrix generated by, e.g., sandwich::vcovHC
...	Additional argument(s) for methods

**Details**

Wrapper for confint with robust standard errors. See <http://stackoverflow.com/a/3820125/1974918>

---

confusion	<i>Confusion matrix</i>
-----------	-------------------------

---

## Description

Confusion matrix

## Usage

```
confusion(dataset, pred, rvar, lev = "", cost = 1, margin = 2,  
  train = "", 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
pred	Predictions or predictors
rvar	Response variable
lev	The level in the response variable defined as <code>_success_</code>
cost	Cost for each connection (e.g., email or mailing)
margin	Margin on each customer purchase
train	Use data from training ("Training"), validation ("Validation"), both ("Both"), or all data ("All") to evaluate model evalbin
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")
...	further arguments passed to or from other methods

## Details

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

## Value

A list of results

## See Also

[summary.confusion](#) to summarize results

[plot.confusion](#) to plot results

---

crs	<i>Collaborative Filtering</i>
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---

**Description**

Collaborative Filtering

**Usage**

```
crs(dataset, id, prod, pred, rate, 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
id	String with name of the variable containing user ids
prod	String with name of the variable with product ids
pred	Products to predict for
rate	String with name of the variable with product ratings
data_filter	Expression entered in, e.g., Data > View to filter the dataset in Radiant. The expression should be a string (e.g., "training == 1")

**Details**

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

**Value**

A data.frame with the original data and a new column with predicted ratings

---

crtree	<i>Classification and regression trees</i>
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---

**Description**

Classification and regression trees

**Usage**

```
crtree(dataset, rvar, evar, type = "", lev = "", wts = "None",
  cp = 0.001, nodes = NA, K = 10, seed = 1234, split = "gini",
  prior = NA, cost = NA, margin = NA, check = "", 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
rvar	The response variable in the model
evvar	Explanatory variables in the model
type	Model type (i.e., "classification" or "regression")
lev	The level in the response variable defined as <code>_success_</code>
weights	Weights to use in estimation
cp	Minimum proportion of root node deviance required for split (default = 0.00001)
nodes	Maximum size of tree in number of nodes to return. If equal to NA no pruning is done
K	Number of folds use in cross-validation
seed	Random seed used for cross-validation
split	Splitting criterium to use (i.e., "gini" or "information")
prior	Adjust the initial probability for the selected level (e.g., set to .5 in unbalanced samples)
cost	Cost for each connection (e.g., email or mailing)
margin	Margin on each customer purchase
check	Optional estimation parameters ("standardize" 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/model/crtree.html> for an example in Radiant

## Value

A list with all variables defined in `crtree` as an object of class `tree`

## See Also

`summary.crtree` to summarize results

`plot.crtree` to plot results

`predict.crtree` for prediction

## Examples

```
result <- crtree("titanic", "survived", c("pclass","sex"), lev = "Yes")
result <- crtree("titanic", "survived", c("pclass","sex"))
result <- crtree("diamonds", "price", c("carat","clarity"), type = "regression")
```

---

direct_marketing	<i>Direct marketing data</i>
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---

**Description**

Direct marketing data

**Usage**

```
data(direct_marketing)
```

**Format**

A data frame with 1,000 rows and 12 variables

**Details**

Description provided in `attr(direct_marketing,"description")`

---

dtree	<i>Create a decision tree</i>
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---

**Description**

Create a decision tree

**Usage**

```
dtree(y1, opt = "max", base = character(0))
```

**Arguments**

y1	A yaml string or a list (e.g., from <code>yaml::yaml.load_file()</code> )
opt	Find the maximum ("max") or minimum ("min") value for each decision node
base	List of variable definitions from a base tree used when calling a sub-tree

**Details**

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

**Value**

A list with the initial tree and the calculated tree

**See Also**

[summary.dtree](#) to summarize results

[plot.dtree](#) to plot results

[sensitivity.dtree](#) to plot results

---

dtree_parser	<i>Parse yaml input for dtree to provide (more) useful error messages</i>
--------------	---

---

**Description**

Parse yaml input for dtree to provide (more) useful error messages

**Usage**

```
dtree_parser(y1)
```

**Arguments**

y1                      A yaml string

**Details**

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

**Value**

An updated yaml string or a vector messages to return to the users

**See Also**

[dtree](#) to calculate tree  
[summary.dtree](#) to summarize results  
[plot.dtree](#) to plot results

---

dvd	<i>Data on DVD sales</i>
-----	--------------------------

---

**Description**

Data on DVD sales

**Usage**

```
data(dvd)
```

**Format**

A data frame with 20,000 rows and 4 variables

**Details**

Binary purchase response to coupon value. Description provided in attr(dvd,"description")

---

`evalbin`*Model evalbin*

---

**Description**

Model evalbin

**Usage**

```
evalbin(dataset, pred, rvar, lev = "", qnt = 10, cost = 1, margin = 2,  
        train = "", 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>pred</code>	Predictions or predictors
<code>rvar</code>	Response variable
<code>lev</code>	The level in the response variable defined as <code>_success_</code>
<code>qnt</code>	Number of bins to create
<code>cost</code>	Cost for each connection (e.g., email or mailing)
<code>margin</code>	Margin on each customer purchase
<code>train</code>	Use data from training ("Training"), validation ("Validation"), both ("Both"), or all data ("All") to evaluate model evalbin
<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/model/evalbin.html> for an example in Radiant

**Value**

A list of results

**See Also**

[summary.evalbin](#) to summarize results

[plot.evalbin](#) to plot results

**Examples**

```
result <- evalbin("titanic", c("age", "fare"), "survived")
```

evalreg

*Model evalreg***Description**

Model evalreg

**Usage**

```
evalreg(dataset, pred, rvar, train = "", 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
pred	Predictions or predictors
rvar	Response variable
train	Use data from training ("Training"), validation ("Validation"), both ("Both"), or all data ("All") to evaluate model evalreg
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/model/evalreg.html> for an example in Radiant

**Value**

A list of results

**See Also**

`summary.evalreg` to summarize results

`plot.evalreg` to plot results

find\_max

*Find maxium value of a vector***Description**

Find maxium value of a vector

**Usage**

```
find_max(var, val = "")
```

**Arguments**

<code>var</code>	Variable to find the maximum for
<code>val</code>	Variable to find the value for at the maximum of <code>var</code>

**Value**

Value of `val` at the maximum of `var`

---

<code>find_min</code>	<i>Find minimum value of a vector</i>
-----------------------	---------------------------------------

---

**Description**

Find minimum value of a vector

**Usage**

```
find_min(var, val = "")
```

**Arguments**

<code>var</code>	Variable to find the minimum for
<code>val</code>	Variable to find the value for at the maximum of <code>var</code>

**Value**

Value of `val` at the minimum of `var`

---

<code>houseprices</code>	<i>Houseprices</i>
--------------------------	--------------------

---

**Description**

Houseprices

**Usage**

```
data(houseprices)
```

**Format**

A data frame with 128 home sales and 6 variables

**Details**

Description provided in `attr(houseprices,"description")`

---

ideal	<i>Ideal data for linear regression</i>
-------	---

---

**Description**

Ideal data for linear regression

**Usage**

```
data(ideal)
```

**Format**

A data frame with 1,000 rows and 4 variables

**Details**

Description provided in attr(ideal,"description")

---

logistic	<i>Logistic regression</i>
----------	----------------------------

---

**Description**

Logistic regression

**Usage**

```
logistic(dataset, rvar, evar, lev = "", int = "", wts = "None",
  check = "", 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
rvar	The response variable in the model
evar	Explanatory variables in the model
lev	The level in the response variable defined as <code>_success_</code>
int	Interaction term to include in the model
wts	Weights to use in estimation
check	Use "standardize" to see standardized coefficient estimates. Use "stepwise-backward" (or "stepwise-forward", or "stepwise-both") to apply step-wise selection of variables in estimation. Add "robust" for robust estimation of standard errors (HC1)
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/model/logistic.html> for an example in Radiant

**Value**

A list with all variables defined in `logistic` as an object of class `logistic`

**See Also**

`summary.logistic` to summarize the results

`plot.logistic` to plot the results

`predict.logistic` to generate predictions

`plot.model.predict` to plot prediction output

**Examples**

```
result <- logistic("titanic", "survived", c("pclass","sex"), lev = "Yes")
result <- logistic("titanic", "survived", c("pclass","sex"))
```

---

minmax

*Calculate min and max before standardization*

---

**Description**

Calculate min and max before standardization

**Usage**

```
minmax(dat)
```

**Arguments**

dat                      Data frame

**Value**

Data frame min and max attributes



---

nb	<i>Naive Bayes using e1071::naiveBayes</i>
----	--

---

## Description

Naive Bayes using e1071::naiveBayes

## Usage

```
nb(dataset, rvar, evar, laplace = 0, 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
rvar	The response variable in the logit (probit) model
evar	Explanatory variables in the model
laplace	Positive double controlling Laplace smoothing. The default (0) disables Laplace smoothing.
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/model/nb.html> for an example in Radiant

## Value

A list with all variables defined in nb as an object of class nb

## See Also

[summary.nb](#) to summarize results  
[plot.nb](#) to plot results  
[predict.nb](#) for prediction

## Examples

```
result <- nb("titanic", "survived", c("pclass", "sex", "age"))
```

---

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

---

## Description

Plot method for the ann function

## Usage

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

## Arguments

x	Return value from <a href="#">ann</a>
plots	Plots to produce for the specified ANN model. Use "" to avoid showing any plots (default). Options are "olden" or "garson" for importance plots, or "net" to depict the network structure
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/model/ann.html> for an example in Radiant

## See Also

[ann](#) to generate results  
[summary.ann](#) to summarize results  
[predict.ann](#) for prediction

## Examples

```
result <- ann("titanic", "survived", c("pclass","sex"), lev = "Yes")
plot(result, plots = c("olden","net"))
```

---

plot.confusion	<i>Plot method for the confusion matrix</i>
----------------	---

---

### Description

Plot method for the confusion matrix

### Usage

```
## S3 method for class 'confusion'
plot(x, vars = c("kappa", "index", "ROME", "AUC"),
     scale_y = TRUE, ...)
```

### Arguments

x	Return value from <a href="#">confusion</a>
vars	Measures to plot, i.e., one or more of "TP", "FP", "TN", "FN", "total", "TPR", "TNR", "precision", "accuracy", "kappa", "profit", "index", "ROME", "contact", "AUC"
scale_y	Free scale in faceted plot of the confusion matrix (TRUE or FALSE)
...	further arguments passed to or from other methods

### Details

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

### See Also

[confusion](#) to generate results  
[summary.confusion](#) to summarize results

---

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

---

### Description

Plot method for the crs function

### Usage

```
## S3 method for class 'crs'
plot(x, ...)
```

### Arguments

x	Return value from <a href="#">crs</a>
...	further arguments passed to or from other methods

**Details**

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

**See Also**

[crs](#) to generate results

[summary.crs](#) to summarize results

---

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

---

**Description**

Plot method for the crtree function

**Usage**

```
## S3 method for class 'crtree'
plot(x, plots = "tree", orient = "LR", width = "900px",
     labs = TRUE, dec = 2, shiny = FALSE, custom = FALSE, ...)
```

**Arguments**

x	Return value from <a href="#">crtree</a>
plots	Plots to produce for the specified rpart tree. "tree" shows a tree diagram. "prune" shows a line graph to evaluate appropriate tree pruning. "imp" shows a variable importance plot
orient	Plot orientation for tree: LR for vertical and TD for horizontal
width	Plot width in pixels for tree (default is "900px")
labs	Use factor labels in plot (TRUE) or revert to default letters used by tree (FALSE)
dec	Decimal places to round results to
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/model/crtree.html> for an example in Radiant. The standard tree plot used by the rpart package can be generated by `plot.rpart(result$model)`. See [plot.rpart](#) for additional details.

**See Also**

[crtree](#) to generate results

[summary.crtree](#) to summarize results

[predict.crtree](#) for prediction

## Examples

```
result <- ctree("titanic", "survived", c("pclass", "sex"), lev = "Yes")
plot(result)
result <- ctree("diamonds", "price", c("carat", "clarity", "cut"))
plot(result, plots = "prune")
result <- ctree("dvd", "buy", c("coupon", "purch", "last"), cp = .01)
plot(result, plots = "imp")
```

---

plot.dtree

---

*Plot method for the dtree function*


---

## Description

Plot method for the dtree function

## Usage

```
## S3 method for class 'dtree'
plot(x, symbol = "$", dec = 2, final = FALSE,
     orient = "LR", width = "900px", ...)
```

## Arguments

x	Return value from <a href="#">dtree</a>
symbol	Monetary symbol to use (\$ is the default)
dec	Decimal places to round results to
final	If TRUE plot the decision tree solution, else the initial decision tree
orient	Plot orientation: LR for vertical and TD for horizontal
width	Plot width in pixels (default is "900px")
...	further arguments passed to or from other methods

## Details

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

## See Also

[dtree](#) to generate the result  
[summary.dtree](#) to summarize results  
[sensitivity.dtree](#) to plot results

---

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

---

## Description

Plot method for the evalbin function

## Usage

```
## S3 method for class 'evalbin'  
plot(x, plots = c("lift", "gains"), shiny = FALSE,  
      custom = FALSE, ...)
```

## Arguments

x	Return value from <a href="#">evalbin</a>
plots	Plots to return
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/model/evalbin.html> for an example in Radiant

## See Also

[evalbin](#) to generate results  
[summary.evalbin](#) to summarize results

## Examples

```
evalbin("titanic", "age", "survived") %>% plot  
evalbin("titanic", c("age", "fare"), "survived") %>% plot  
evalbin("titanic", c("age", "fare"), "survived") %>% summary
```

---

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

---

### Description

Plot method for the evalreg function

### Usage

```
## S3 method for class 'evalreg'  
plot(x, vars = c("Rsquared", "RMSE", "MAE"), ...)
```

### Arguments

x	Return value from <a href="#">evalreg</a>
vars	Measures to plot, i.e., one or more of "Rsquared", "RMSE", "MAE"
...	further arguments passed to or from other methods

### Details

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

### See Also

[evalreg](#) to generate results  
[summary.evalreg](#) to summarize results

---

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

---

### Description

Plot method for the logistic function

### Usage

```
## S3 method for class 'logistic'  
plot(x, plots = "", conf_lev = 0.95, intercept = FALSE,  
      shiny = FALSE, custom = FALSE, ...)
```

**Arguments**

x	Return value from <code>logistic</code>
plots	Plots to produce for the specified GLM model. Use "" to avoid showing any plots (default). "dist" shows histograms (or frequency bar plots) of all variables in the model. "scatter" shows scatter plots (or box plots for factors) for the response variable with each explanatory variable. "dashboard" is a series of four plots used to visually evaluate model. "coef" provides a coefficient plot
conf_lev	Confidence level to use for coefficient and odds confidence intervals (.95 is the default)
intercept	Include the intercept in the coefficient plot (TRUE or FALSE). FALSE is the default
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/model/logistic.html> for an example in Radian

**See Also**

`logistic` to generate results  
`plot.logistic` to plot results  
`predict.logistic` to generate predictions  
`plot.model.predict` to plot prediction output

**Examples**

```
result <- logistic("titanic", "survived", c("pclass","sex"), lev = "Yes")
plot(result, plots = "coef")
```

---

plot.model.predict	<i>Plot method for model.predict functions</i>
--------------------	--

---

**Description**

Plot method for model.predict functions

**Usage**

```
## S3 method for class 'model.predict'
plot(x, xvar = "", facet_row = ".",
     facet_col = ".", color = "none", conf_lev = 0.95, ...)
```



**Arguments**

x	Return value from predict functions (e.g., predict.regress)
xvar	Variable to display along the X-axis of the plot
facet_row	Create vertically arranged subplots for each level of the selected factor variable
facet_col	Create horizontally arranged subplots for each level of the selected factor variable
color	Adds color to a scatter plot to generate a heat map. For a line plot one line is created for each group and each is assigned a different colour
conf_lev	Confidence level to use for prediction intervals (.95 is the default)
...	further arguments passed to or from other methods

**See Also**

[predict.regress](#) to generate predictions

[predict.logistic](#) to generate predictions

**Examples**

```
regress("diamonds", "price", c("carat","clarity")) %>%
  predict(pred_cmd = "carat = 1:10") %>%
  plot(xvar = "carat")
logistic("titanic", "survived", c("pclass","sex","age"), lev = "Yes") %>%
  predict(pred_cmd="pclass=levels(pclass), sex=levels(sex), age=seq(0,100,20)") %>%
  plot(xvar = "age", color = "sex", facet_col = "pclass")
```

---

plot.nb

---

*Plot method for the nb function*


---

**Description**

Plot method for the nb function

**Usage**

```
## S3 method for class 'nb'
plot(x, ...)
```

**Arguments**

x	Return value from <a href="#">nb</a>
...	further arguments passed to or from other methods

**Details**

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

**See Also**

[nb](#) to generate results  
[summary.nb](#) to summarize results  
[predict.nb](#) for prediction

**Examples**

```
result <- nb("titanic", "survived", c("pclass","sex"))
plot(result)
result <- nb("titanic", "pclass", c("sex","age"))
plot(result)
```

---

plot.nb.predict	<i>Plot method for nb.predict function</i>
-----------------	--

---

**Description**

Plot method for nb.predict function

**Usage**

```
## S3 method for class 'nb.predict'
plot(x, xvar = "", facet_row = ".", facet_col = ".",
     color = ".class", ...)
```

**Arguments**

x	Return value from predict function predict.nb
xvar	Variable to display along the X-axis of the plot
facet_row	Create vertically arranged subplots for each level of the selected factor variable
facet_col	Create horizontally arranged subplots for each level of the selected factor variable
color	Adds color to a scatter plot to generate a heat map. For a line plot one line is created for each group and each is assigned a different colour
...	further arguments passed to or from other methods

**See Also**

[predict.nb](#) to generate predictions

**Examples**

```
result <- nb("titanic", "survived", c("pclass","sex","age"))
pred <- predict(result, pred_cmd="pclass=levels(pclass), sex=levels(sex), age=seq(0,100,20)")
plot(pred, xvar = "age", facet_col = "sex", facet_row = "pclass")
pred <- predict(result, pred_data="titanic")
plot(pred, xvar = "age", facet_col = "sex")
```

---

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

---

## Description

Plot method for the regress function

## Usage

```
## S3 method for class 'regress'
plot(x, plots = "", lines = "", conf_lev = 0.95,
     intercept = FALSE, shiny = FALSE, custom = FALSE, ...)
```

## Arguments

x	Return value from <a href="#">regress</a>
plots	Regression plots to produce for the specified regression model. Enter "" to avoid showing any plots (default). "dist" to shows histograms (or frequency bar plots) of all variables in the model. "correlations" for a visual representation of the correlation matrix selected variables. "scatter" to show scatter plots (or box plots for factors) for the response variable with each explanatory variable. "dashboard" for a series of six plots that can be used to evaluate model fit visually. "resid_pred" to plot the explanatory variables against the model residuals. "coef" for a coefficient plot with adjustable confidence intervals. "leverage" to show leverage plots for each explanatory variable
lines	Optional lines to include in the select plot. "line" to include a line through a scatter plot. "loess" to include a polynomial regression fit line. To include both use c("line","loess")
conf_lev	Confidence level used to estimate confidence intervals (.95 is the default)
intercept	Include the intercept in the coefficient plot (TRUE, FALSE). FALSE is the default
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/model/regress.html> for an example in Radiant

## See Also

[regress](#) to generate the results  
[summary.regress](#) to summarize results  
[predict.regress](#) to generate predictions

**Examples**

```

result <- regress("diamonds", "price", c("carat","clarity"))
plot(result, plots = "coef", conf_lev = .99, intercept = TRUE)
plot(result, plots = "dist")
## Not run:
plot(result, plots = "scatter", lines = c("line","loess"))
plot(result, plots = "resid_pred", lines = "line")
plot(result, plots = "dashboard", lines = c("line","loess"))

## End(Not run)

```

---

plot.repeater	<i>Plot repeated simulation</i>
---------------	---------------------------------

---

**Description**

Plot repeated simulation

**Usage**

```

## S3 method for class 'repeater'
plot(x, bins = 20, shiny = FALSE, custom = FALSE, ...)

```

**Arguments**

x	Return value from <a href="#">repeater</a>
bins	Number of bins used for histograms (1 - 50)
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

---

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

---

**Description**

Plot method for the simulater function

**Usage**

```

## S3 method for class 'simulater'
plot(x, bins = 20, shiny = FALSE, custom = FALSE, ...)

```

**Arguments**

x	Return value from <a href="#">simulator</a>
bins	Number of bins used for histograms (1 - 50)
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/model/simulator> for an example in Radiant

**See Also**

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

**Examples**

```
result <- simulator(
  const = "cost 3",
  norm = "demand 2000 1000",
  discrete = "price 5 8 .3 .7",
  form = "profit = demand * (price - cost)"
)
plot(result, bins = 25)
```

---

predict.ann	<i>Predict method for the ann function</i>
-------------	--

---

**Description**

Predict method for the ann function

**Usage**

```
## S3 method for class 'ann'
predict(object, pred_data = "", pred_cmd = "",
  conf_lev = 0.95, se = FALSE, dec = 3, ...)
```

**Arguments**

object	Return value from <a href="#">ann</a>
pred_data	Provide the name of a dataframe to generate predictions (e.g., "titanic"). The dataset must contain all columns used in the estimation

pred_cmd	Generate predictions using a command. For example, 'pclass = levels(pclass)' would produce predictions for the different levels of factor 'pclass'. To add another variable use a ',' (e.g., 'pclass = levels(pclass), age = seq(0,100,20)')
conf_lev	Confidence level used to estimate confidence intervals (.95 is the default)
se	Logical that indicates if prediction standard errors should be calculated (default = FALSE)
dec	Number of decimals to show
...	further arguments passed to or from other methods

### Details

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

### See Also

[ann](#) to generate the result

[summary.ann](#) to summarize results

### Examples

```
result <- ann("titanic", "survived", c("pclass","sex"), lev = "Yes")
predict(result, pred_cmd = "pclass = levels(pclass)")
result <- ann("diamonds", "price", "carat:color", type = "regression")
predict(result, pred_cmd = "carat = 1:3")
predict(result, pred_data = "diamonds") %>% head
```

---

predict.crtree	<i>Predict method for the crtree function</i>
----------------	---

---

### Description

Predict method for the crtree function

### Usage

```
## S3 method for class 'crtree'
predict(object, pred_data = "", pred_cmd = "",
        conf_lev = 0.95, se = FALSE, dec = 3, ...)
```

### Arguments

object	Return value from <a href="#">crtree</a>
pred_data	Provide the name of a dataframe to generate predictions (e.g., "titanic"). The dataset must contain all columns used in the estimation
pred_cmd	Generate predictions using a command. For example, 'pclass = levels(pclass)' would produce predictions for the different levels of factor 'pclass'. To add another variable use a ',' (e.g., 'pclass = levels(pclass), age = seq(0,100,20)')
conf_lev	Confidence level used to estimate confidence intervals (.95 is the default)

se	Logical that indicates if prediction standard errors should be calculated (default = FALSE)
dec	Number of decimals to show
...	further arguments passed to or from other methods

### Details

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

### See Also

`crtree` to generate the result  
`summary.crtree` to summarize results

### Examples

```
result <- crtree("titanic", "survived", c("pclass", "sex"), lev = "Yes")
predict(result, pred_cmd = "pclass = levels(pclass)")
result <- crtree("titanic", "survived", "pclass", lev = "Yes")
predict(result, pred_data = "titanic") %>% head
```

---

predict.logistic	<i>Predict method for the logistic function</i>
------------------	---

---

### Description

Predict method for the logistic function

### Usage

```
## S3 method for class 'logistic'
predict(object, pred_data = "", pred_cmd = "",
        conf_lev = 0.95, se = FALSE, dec = 3, ...)
```

### Arguments

object	Return value from <code>logistic</code>
pred_data	Provide the name of a dataframe to generate predictions (e.g., "titanic"). The dataset must contain all columns used in the estimation
pred_cmd	Generate predictions using a command. For example, 'pclass = levels(pclass)' would produce predictions for the different levels of factor 'pclass'. To add another variable use a ',' (e.g., 'pclass = levels(pclass), age = seq(0,100,20)')
conf_lev	Confidence level used to estimate confidence intervals (.95 is the default)
se	Logical that indicates if prediction standard errors should be calculated (default = FALSE)
dec	Number of decimals to show
...	further arguments passed to or from other methods

## Details

See <https://radiant-rstats.github.io/docs/model/logistic.html> for an example in Radian

## See Also

`logistic` to generate the result  
`summary.logistic` to summarize results  
`plot.logistic` to plot results  
`plot.model.predict` to plot prediction output

## Examples

```
result <- logistic("titanic", "survived", c("pclass","sex"), lev = "Yes")
predict(result, pred_cmd = "pclass = levels(pclass)")
logistic("titanic", "survived", c("pclass","sex"), lev = "Yes") %>%
  predict(pred_cmd = "sex = c('male','female')")
logistic("titanic", "survived", c("pclass","sex"), lev = "Yes") %>%
  predict(pred_data = "titanic")
```

---

predict.nb	<i>Predict method for the nb function</i>
------------	---

---

## Description

Predict method for the nb function

## Usage

```
## S3 method for class 'nb'
predict(object, pred_data = "", pred_cmd = "",
  pred_names = "", dec = 3, ...)
```

## Arguments

object	Return value from <code>nb</code>
pred_data	Provide the name of a dataframe to generate predictions (e.g., "titanic"). The dataset must contain all columns used in the estimation
pred_cmd	Generate predictions using a command. For example, 'pclass = levels(pclass)' would produce predictions for the different levels of factor 'pclass'. To add another variable use a ',' (e.g., 'pclass = levels(pclass), age = seq(0,100,20)')
pred_names	Names for the predictions to be stored. If one name is provided, only the first column of predictions is stored. If empty, the level in the response variable of the nb model will be used
dec	Number of decimals to show
...	further arguments passed to or from other methods



**Details**

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

**See Also**

[nb](#) to generate the result

[summary.nb](#) to summarize results

**Examples**

```
result <- nb("titanic", "survived", c("pclass", "sex", "age"))
predict(result, pred_data = "titanic")
predict(result, pred_data = "titanic", pred_names = c("Yes", "No"))
predict(result, pred_cmd = "pclass = levels(pclass)")
result <- nb("titanic", "pclass", c("survived", "sex", "age"))
predict(result, pred_data = "titanic")
predict(result, pred_data = "titanic", pred_names = c("1st", "2nd", "3rd"))
predict(result, pred_data = "titanic", pred_names = "")
predict(result, pred_data = "titanic", pred_names = NA)
```

---

predict.regress

*Predict method for the regress function*

---

**Description**

Predict method for the regress function

**Usage**

```
## S3 method for class 'regress'
predict(object, pred_data = "", pred_cmd = "",
        conf_lev = 0.95, se = TRUE, dec = 3, ...)
```

**Arguments**

object	Return value from <a href="#">regress</a>
pred_data	Name of the dataset to use for prediction
pred_cmd	Command used to generate data for prediction
conf_lev	Confidence level used to estimate confidence intervals (.95 is the default)
se	Logical that indicates if prediction standard errors should be calculated (default = FALSE)
dec	Number of decimals to show
...	further arguments passed to or from other methods

**Details**

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

**See Also**

[regress](#) to generate the result

[summary.regress](#) to summarize results

[plot.regress](#) to plot results

**Examples**

```
result <- regress("diamonds", "price", c("carat","clarity"))
predict(result, pred_cmd = "carat = 1:10")
predict(result, pred_cmd = "clarity = levels(clarity)")
result <- regress("diamonds", "price", c("carat","clarity"), int = c("carat:clarity"))
dpred <- getdata("diamonds") %>% slice(1:10)
predict(result, pred_data = "dpred")
rm(dpred, envir = .GlobalEnv)
```

---

predict_model	<i>Predict method for model functions</i>
---------------	---

---

**Description**

Predict method for model functions

**Usage**

```
predict_model(object, pfun, mclass, pred_data = "", pred_cmd = "",
  conf_lev = 0.95, se = FALSE, dec = 3, ...)
```

**Arguments**

object	Return value from <a href="#">regress</a>
pfun	Function to use for prediction
mclass	Model class to attach
pred_data	Name of the dataset to use for prediction
pred_cmd	Command used to generate data for prediction
conf_lev	Confidence level used to estimate confidence intervals (.95 is the default)
se	Logical that indicates if prediction standard errors should be calculated (default = FALSE)
dec	Number of decimals to show
...	further arguments passed to or from other methods

**Details**

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

---

print.ann.predict	<i>Print method for predict.ann</i>
-------------------	-------------------------------------

---

**Description**

Print method for predict.ann

**Usage**

```
## S3 method for class 'ann.predict'  
print(x, ..., n = 10)
```

**Arguments**

x	Return value from prediction method
...	further arguments passed to or from other methods
n	Number of lines of prediction results to print. Use -1 to print all lines

---

print.crtree.predict	<i>Print method for predict.crtree</i>
----------------------	--

---

**Description**

Print method for predict.crtree

**Usage**

```
## S3 method for class 'crtree.predict'  
print(x, ..., n = 10)
```

**Arguments**

x	Return value from prediction method
...	further arguments passed to or from other methods
n	Number of lines of prediction results to print. Use -1 to print all lines

```
print.logistic.predict
```

*Print method for logistic.predict*

---

### Description

Print method for logistic.predict

### Usage

```
## S3 method for class 'logistic.predict'  
print(x, ..., n = 10)
```

### Arguments

x	Return value from prediction method
...	further arguments passed to or from other methods
n	Number of lines of prediction results to print. Use -1 to print all lines

---

```
print.nb.predict
```

*Print method for predict.nb*

---

### Description

Print method for predict.nb

### Usage

```
## S3 method for class 'nb.predict'  
print(x, ..., n = 10)
```

### Arguments

x	Return value from prediction method
...	further arguments passed to or from other methods
n	Number of lines of prediction results to print. Use -1 to print all lines

---

print.regress.predict *Print method for predict.regress*

---

### Description

Print method for predict.regress

### Usage

```
## S3 method for class 'regress.predict'  
print(x, ..., n = 10)
```

### Arguments

x	Return value from prediction method
...	further arguments passed to or from other methods
n	Number of lines of prediction results to print. Use -1 to print all lines

---

print\_predict\_model *Print method for the model prediction*

---

### Description

Print method for the model prediction

### Usage

```
print_predict_model(x, ..., n = 10, header = "")
```

### Arguments

x	Return value from prediction method
...	further arguments passed to or from other methods
n	Number of lines of prediction results to print. Use -1 to print all lines
header	Header line

---

<code>radiant.model</code>	<i><code>radiant.model</code></i>
----------------------------	-----------------------------------

---

**Description**

`radiant.model`  
 Launch `radiant.model` in default browser

**Usage**

```
radiant.model()
```

**Details**

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

**Examples**

```
## Not run:
radiant.model()

## End(Not run)
```

---

<code>radiant.model-deprecated</code>	<i>Deprecated function(s) in the <code>radiant.model</code> package</i>
---------------------------------------	---

---

**Description**

These functions are provided for compatibility with previous versions of `radiant`. They will eventually be removed.

**Usage**

```
regression(...)
```

**Arguments**

`...` Parameters to be passed to the updated functions

**Details**

`regression` is now a synonym for `regress`  
`glm_reg` is now a synonym for `logistic`  
`performance` is now a synonym for `evalbin`

---

radiant.model\_viewer    *Launch radiant.model in the Rstudio viewer*


---

**Description**

Launch radiant.model in the Rstudio viewer

**Usage**

```
radiant.model_viewer()
```

**Details**

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

**Examples**

```
## Not run:
radiant.model_viewer()

## End(Not run)
```

---

regress                      *Linear regression using OLS*


---

**Description**

Linear regression using OLS

**Usage**

```
regress(dataset, rvar, evar, int = "", check = "", 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
rvar	The response variable in the regression
evar	Explanatory variables in the regression
int	Interaction terms to include in the model
check	Use "standardize" to see standardized coefficient estimates. Use "stepwise-backward" (or "stepwise-forward", or "stepwise-both") to apply step-wise selection of variables in estimation. Add "robust" for robust estimation of standard errors (HC1)
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/model/regress.html> for an example in Radiant

## Value

A list of all variables variables used in the regress function as an object of class regress

## See Also

[summary.regress](#) to summarize results

[plot.regress](#) to plot results

[predict.regress](#) to generate predictions

## Examples

```
result <- regress("diamonds", "price", c("carat","clarity"))
result <- regress("diamonds", "price", c("carat","clarity"), check = "standardize")
```

---

render.DiagrammeR

*Method to render DiagrammeR plots*

---

## Description

Method to render DiagrammeR plots

## Usage

```
## S3 method for class 'DiagrammeR'
render(object, ...)
```

## Arguments

object	DiagrammeR plot
...	Additional arguments



---

repeater	<i>Repeated simulation</i>
----------	----------------------------

---

## Description

Repeated simulation

## Usage

```
repeater(nr = 12, vars = "", grid = "", sum_vars = "", byvar = "sim",
  fun = "sum_rm", form = "", seed = NULL, name = "", sim = "")
```

## Arguments

nr	Number times to repeat the simulation
vars	Variables to use in repeated simulation
grid	Character vector of expressions to use in grid search for constants
sum_vars	(Numeric) variables to summaries
byvar	Variable(s) to group data by before summarizing
fun	Functions to use for summarizing
form	A character vector with the formula to apply to the summarized data
seed	Seed for the repeated simulation
name	Name for data.frame with the repeated simulation data (optional)
sim	Return value from the simulator function (data.frame or data.frame name)

## Examples

```
result <- simulator(
  const = c("var_cost 5", "fixed_cost 1000"),
  norm = "E 0 100;",
  discrete = "price 6 8 .3 .7;",
  form = c(
    "demand = 1000 - 50*price + E",
    "profit = demand*(price-var_cost) - fixed_cost",
    "profit_small = profit < 100"
  ),
  seed = 1234
)

repeater(
  nr = 12,
  vars = c("E", "price"),
  sum_vars = "profit",
  byvar = "sim",
  form = "profit_365 = profit < 36500",
  seed = 1234,
  sim = result
) %>% head
```

---

scaledf	<i>Center or standardize variables in a data frame</i>
---------	--

---

**Description**

Center or standardize variables in a data frame

**Usage**

```
scaledf(dat, center = TRUE, scale = TRUE, sf = 2, wts = NULL,
        calc = TRUE)
```

**Arguments**

dat	Data frame
center	Center data (TRUE or FALSE)
scale	Scale data (TRUE or FALSE)
sf	Scaling factor (default is 2)
wts	Weights to use (default is NULL for no weights)
calc	Calculate mean and sd or use attributes attached to dat

**Value**

Scaled data frame

**See Also**

[copy\\_attr](#) to copy attributes from a training to a validation dataset

---

sdw	<i>Standard deviation of weighted sum of variables</i>
-----	--

---

**Description**

Standard deviation of weighted sum of variables

**Usage**

```
sdw(...)
```

**Arguments**

...	A matched number of weights and stocks
-----	--

**Value**

A vector of standard deviation estimates

---

sensitivity	<i>Method to evaluate sensitivity of an analysis</i>
-------------	--

---

**Description**

Method to evaluate sensitivity of an analysis

**Usage**

```
sensitivity(object, ...)
```

**Arguments**

object	Object of relevant class for which to evaluate sensitivity
...	Additional arguments

---

sensitivity.dtree	<i>Evaluate sensitivity of the decision tree</i>
-------------------	--

---

**Description**

Evaluate sensitivity of the decision tree

**Usage**

```
## S3 method for class 'dtree'
sensitivity(object, vars = NULL, decs = NULL,
  shiny = FALSE, custom = FALSE, ...)
```

**Arguments**

object	Return value from <a href="#">dtree</a>
vars	Variables to include in the sensitivity analysis
decs	Decisions to include in the sensitivity analysis
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.
...	Additional arguments

**Details**

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

**See Also**

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

simulater

*Simulate data for decision analysis***Description**

Simulate data for decision analysis

**Usage**

```
simulater(const = "", lnorm = "", norm = "", unif = "", discrete = "",
  binom = "", sequ = "", grid = "", data = "", form = "",
  seed = NULL, nexact = FALSE, ncorr = NULL, name = "", nr = 1000,
  dat = NULL)
```

**Arguments**

const	A character vector listing the constants to include in the analysis (e.g., c("cost = 3", "size = 4"))
lnorm	A character vector listing the log-normally distributed random variables to include in the analysis (e.g., "demand 2000 1000" where the first number is the log-mean and the second is the log-standard deviation)
norm	A character vector listing the normally distributed random variables to include in the analysis (e.g., "demand 2000 1000" where the first number is the mean and the second is the standard deviation)
unif	A character vector listing the uniformly distributed random variables to include in the analysis (e.g., "demand 0 1" where the first number is the minimum value and the second is the maximum value)
discrete	A character vector listing the random variables with a discrete distribution to include in the analysis (e.g., "price 5 8 .3 .7" where the first set of numbers are the values and the second set the probabilities)
binom	A character vector listing the random variables with a binomial distribution to include in the analysis (e.g., "crash 100 .01") where the first number is the number of trials and the second is the probability of success)
sequ	A character vector listing the start and end for a sequence to include in the analysis (e.g., "trend 1 100 1"). The number of 'steps' is determined by the number of simulations.
grid	A character vector listing the start, end, and step for a set of sequences to include in the analysis (e.g., "trend 1 100 1"). The number of rows in the expanded will over ride the number of simulations
data	Name of a dataset to be used in the calculations
form	A character vector with the formula to evaluate (e.g., "profit = demand * (price - cost)")
seed	Optional seed used in simulation
nexact	Logical to indicate if normally distributed random variables should be simulated to the exact specified values
ncorr	A string of correlations used for normally distributed random variables. The number of values should be equal to one or to the number of combinations of variables simulated

name	Name used to store the simulated data (optional)
nr	Number of simulations
dat	Data list from previous simulation. Used by repeater function

### Details

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

### Value

A data.frame with the simulated data

### See Also

[summary.simulater](#) to summarize results

[plot.simulater](#) to plot results

### Examples

```
result <- simulator(  
  const = "cost 3",  
  norm = "demand 2000 1000",  
  discrete = "price 5 8 .3 .7",  
  form = "profit = demand * (price - cost)",  
)
```

---

sim_cleaner	<i>Clean input command string</i>
-------------	-----------------------------------

---

### Description

Clean input command string

### Usage

```
sim_cleaner(x)
```

### Arguments

x                      Input string

### Value

Cleaned string

---

sim\_cor

*Simulate correlated normally distributed data*


---

**Description**

Simulate correlated normally distributed data

**Usage**

```
sim_cor(n, rho, means, sds, exact = FALSE)
```

**Arguments**

n	The number of values to simulate (i.e., the number of rows in the simulated data)
rho	A vector of correlations to apply to the columns of the simulated data. The number of values should be equal to one or to the number of combinations of variables to be simulated
means	A vector of means. The number of values should be equal to the number of variables to simulate
sds	A vector of standard deviations. The number of values should be equal to the number of variables to simulate
exact	A logical that indicates if the inputs should be interpreted as population of sample characteristics

**Value**

A data.frame with the simulated data

---

sim\_splitter

*Split input command string*


---

**Description**

Split input command string

**Usage**

```
sim_splitter(x, symbol = " ")
```

**Arguments**

x	Input string
symbol	Symbol used to split the command string

**Value**

Split input command string

---

sim_summary	<i>Print simulation summary</i>
-------------	---------------------------------

---

**Description**

Print simulation summary

**Usage**

```
sim_summary(dat, dc = getclass(dat), fun = "", dec = 4)
```

**Arguments**

dat	Simulated data
dc	Variable classes
fun	Summary function to apply
dec	Number of decimals to show

---

store.crs	<i>Store predicted values generated in the crs function</i>
-----------	---

---

**Description**

Store predicted values generated in the crs function

**Usage**

```
## S3 method for class 'crs'  
store(object, name = "predict_cf", envir = parent.frame(),  
      ...)
```

**Arguments**

object	Return value from crs
name	Name of the dataset to store
envir	Environment to assign 'new' dataset (optional). Used when an r_data list is not available
...	further arguments passed to or from other methods

**Details**

Store data frame with predictions in Radiant r\_data list if available. See <https://radiant-rstats.github.io/docs/model/crs.html> for an example in Radiant

---

store.model	<i>Store residuals from a model</i>
-------------	-------------------------------------

---

### Description

Store residuals from a model

### Usage

```
## S3 method for class 'model'
store(object, ..., name = "residuals")
```

### Arguments

object	Return value from a model function
...	Additional arguments
name	Variable name(s) assigned to predicted values

### Details

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

### Examples

```
regress(diamonds, rvar = "price", evar = c("carat", "cut")) %>%
  store %>% head
```

---

store.model.predict	<i>Store predicted values generated in model functions</i>
---------------------	--

---

### Description

Store predicted values generated in model functions

### Usage

```
## S3 method for class 'model.predict'
store(object, ..., data = attr(object, "pred_data"),
      name = "prediction")
```

### Arguments

object	Return value from model function
...	Additional arguments
data	Data or dataset name (e.g., data = mtcars or data = "mtcars")
name	Variable name(s) assigned to predicted values



**Details**

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

**Examples**

```
regress(diamonds, rvar = "price", evar = c("carat", "cut")) %>%
  predict(diamonds) %>%
  store(name = "pred", pred_low, pred_high) %>% head
```

---

store.nb.predict	<i>Store predicted values generated in the nb function</i>
------------------	--

---

**Description**

Store predicted values generated in the nb function

**Usage**

```
## S3 method for class 'nb.predict'
store(object, ..., data = attr(object, "pred_data"),
      name = "")
```

**Arguments**

object	Return value from model function
...	Additional arguments
data	Data or dataset name (e.g., data = mtcars or data = "mtcars")
name	Variable name(s) assigned to predicted values. If empty, the levels of the response variable will be used

**Details**

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

**Examples**

```
result <- nb("titanic", "survived", c("pclass", "sex", "age"))
pred <- predict(result, pred_data = "titanic")
store(pred, data = titanic, name = "pred") %>% head
store(pred, data = titanic) %>% head
```

---

store_ann	<i>Deprecated function to store predictions from an ANN</i>
-----------	---

---

### Description

Deprecated function to store predictions from an ANN

### Usage

```
store_ann(object, data = object$dataset, name = paste0("predict_ann"))
```

### Arguments

object	Return value from <a href="#">predict.ann</a>
data	Dataset name
name	Variable name assigned to the residuals or predicted values

### Details

Use [store.model.predict](#) or [store.model](#) instead

---

store_glm	<i>Deprecated function to store logistic regression residuals and predictions</i>
-----------	---

---

### Description

Deprecated function to store logistic regression residuals and predictions

### Usage

```
store_glm(object, data = object$dataset, type = "residuals",
  name = paste0(type, "_logit"))
```

### Arguments

object	Return value from <a href="#">logistic</a> or <a href="#">predict.logistic</a>
data	Dataset name
type	Residuals ("residuals") or predictions ("predictions"). For predictions the dataset name must be provided
name	Variable name assigned to the residuals or predicted values

### Details

Use [store.model.predict](#) or [store.model](#) instead

---

store_reg	<i>Deprecated function to store regression residuals and predictions</i>
-----------	--

---

### Description

Deprecated function to store regression residuals and predictions

### Usage

```
store_reg(object, data = object$dataset, type = "residuals",
  name = paste0(type, "_reg"))
```

### Arguments

object	Return value from <a href="#">regress</a> or <a href="#">predict.regress</a>
data	Dataset name
type	Residuals ("residuals") or predictions ("predictions"). For predictions the dataset name must be provided
name	Variable name assigned to the residuals or predicted values

### Details

Use [store.model.predict](#) or [store.model](#) instead

---

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

---

### Description

Summary method for the ann function

### Usage

```
## S3 method for class 'ann'
summary(object, prn = TRUE, ...)
```

### Arguments

object	Return value from <a href="#">ann</a>
prn	Print list of weights
...	further arguments passed to or from other methods

### Details

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

**See Also**

[ann](#) to generate results

[plot.ann](#) to plot results

[predict.ann](#) for prediction

**Examples**

```
result <- ann("titanic", "survived", "pclass", lev = "Yes")
summary(result)
```

---

summary.confusion

*Summary method for the confusion matrix*

---

**Description**

Summary method for the confusion matrix

**Usage**

```
## S3 method for class 'confusion'
summary(object, ...)
```

**Arguments**

object	Return value from <a href="#">confusion</a>
...	further arguments passed to or from other methods

**Details**

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

**See Also**

[confusion](#) to generate results

[plot.confusion](#) to visualize result

---

summary.crs	<i>Summary method for Collaborative Filter</i>
-------------	--

---

**Description**

Summary method for Collaborative Filter

**Usage**

```
## S3 method for class 'crs'
summary(object, n = 36, dec = 2, ...)
```

**Arguments**

object	Return value from <a href="#">crs</a>
n	Number of lines of recommendations to print. Use -1 to print all lines
dec	Number of decimals to show
...	further arguments passed to or from other methods

**Details**

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

**See Also**

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

---

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

---

**Description**

Summary method for the crtree function

**Usage**

```
## S3 method for class 'crtree'
summary(object, prn = TRUE, ...)
```

**Arguments**

object	Return value from <a href="#">crtree</a>
prn	Print tree in text form
...	further arguments passed to or from other methods

**Details**

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

**See Also**

[crtree](#) to generate results  
[plot.crtree](#) to plot results  
[predict.crtree](#) for prediction

**Examples**

```
result <- crtree("titanic", "survived", c("pclass","sex"), lev = "Yes")
summary(result)
result <- crtree("diamonds", "price", c("carat","color"), type = "regression")
summary(result)
```

---

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

---

**Description**

Summary method for the dtree function

**Usage**

```
## S3 method for class 'dtree'
summary(object, input = TRUE, output = FALSE, ...)
```

**Arguments**

object	Return value from <a href="#">simulator</a>
input	Print decision tree input
output	Print decision tree output
...	further arguments passed to or from other methods

**Details**

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

**See Also**

[dtree](#) to generate the results  
[plot.dtree](#) to plot results  
[sensitivity.dtree](#) to plot results

---

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

---

**Description**

Summary method for the evalbin function

**Usage**

```
## S3 method for class 'evalbin'  
summary(object, prn = TRUE, ...)
```

**Arguments**

object	Return value from <a href="#">evalbin</a>
prn	Print full table of measures per model and bin
...	further arguments passed to or from other methods

**Details**

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

**See Also**

[evalbin](#) to summarize results  
[plot.evalbin](#) to plot results

**Examples**

```
evalbin("titanic", "age", "survived") %>% summary  
evalbin("titanic", c("age", "fare"), "survived") %>% summary
```

---

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

---

**Description**

Summary method for the evalreg function

**Usage**

```
## S3 method for class 'evalreg'  
summary(object, ...)
```

**Arguments**

object	Return value from <a href="#">evalreg</a>
...	further arguments passed to or from other methods

**Details**

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

**See Also**

[evalreg](#) to summarize results

[plot.evalreg](#) to plot results

---

summary.logistic

*Summary method for the logistic function*


---

**Description**

Summary method for the logistic function

**Usage**

```
## S3 method for class 'logistic'
summary(object, sum_check = "", conf_lev = 0.95,
        test_var = "", dec = 3, ...)
```

**Arguments**

object	Return value from <a href="#">logistic</a>
sum_check	Optional output. "vif" to show multicollinearity diagnostics. "confint" to show coefficient confidence interval estimates. "odds" to show odds ratios and confidence interval estimates.
conf_lev	Confidence level to use for coefficient and odds confidence intervals (.95 is the default)
test_var	Variables to evaluate in model comparison (i.e., a competing models Chi-squared test)
dec	Number of decimals to show
...	further arguments passed to or from other methods

**Details**

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

**See Also**

[logistic](#) to generate the results

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

[predict.logistic](#) to generate predictions

[plot.model.predict](#) to plot prediction output



**Examples**

```

result <- logistic("titanic", "survived", "pclass", lev = "Yes")
summary(result, test_var = "pclass")
res <- logistic("titanic", "survived", c("pclass","sex"), int="pclass:sex", lev="Yes")
summary(res, sum_check = c("vif","confint","odds"))
titanic %>% logistic("survived", c("pclass","sex","age"), lev = "Yes") %>% summary("vif")

```

summary.nb

*Summary method for the nb function***Description**

Summary method for the nb function

**Usage**

```

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

```

**Arguments**

object	Return value from <a href="#">nb</a>
dec	Decimals
...	further arguments passed to or from other methods

**Details**

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

**See Also**

[nb](#) to generate results  
[plot.nb](#) to plot results  
[predict.nb](#) for prediction

**Examples**

```

result <- nb("titanic", "survived", c("pclass","sex","age"))
summary(result)

```

summary.regress

*Summary method for the regress function***Description**

Summary method for the regress function

**Usage**

```
## S3 method for class 'regress'
summary(object, sum_check = "", conf_lev = 0.95,
        test_var = "", dec = 3, ...)
```

**Arguments**

object	Return value from <a href="#">regress</a>
sum_check	Optional output. "rmse" to show the root mean squared error and the standard deviation of the residuals. "sumsquares" to show the sum of squares table. "vif" to show multicollinearity diagnostics. "confint" to show coefficient confidence interval estimates.
conf_lev	Confidence level used to estimate confidence intervals (.95 is the default)
test_var	Variables to evaluate in model comparison (i.e., a competing models F-test)
dec	Number of decimals to show
...	further arguments passed to or from other methods

**Details**

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

**See Also**

[regress](#) to generate the results  
[plot.regress](#) to plot results  
[predict.regress](#) to generate predictions

**Examples**

```
result <- regress("diamonds", "price", c("carat","clarity"))
summary(result, sum_check = c("rmse","sumsquares","vif","confint"), test_var = "clarity")
result <- regress("ideal", "y", c("x1","x2"))
summary(result, test_var = "x2")
ideal %>% regress("y", "x1:x3") %>% summary
```

---

summary.repeater	<i>Summarize repeated simulation</i>
------------------	--------------------------------------

---

**Description**

Summarize repeated simulation

**Usage**

```
## S3 method for class 'repeater'  
summary(object, dec = 4, ...)
```

**Arguments**

object	Return value from <a href="#">repeater</a>
dec	Number of decimals to show
...	further arguments passed to or from other methods

---

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

---

**Description**

Summary method for the simulater function

**Usage**

```
## S3 method for class 'simulater'  
summary(object, dec = 4, ...)
```

**Arguments**

object	Return value from <a href="#">simulater</a>
dec	Number of decimals to show
...	further arguments passed to or from other methods

**Details**

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

**See Also**

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

**Examples**

```
result <- simulater(norm = "demand 2000 1000")  
summary(result)
```

---

test_specs	<i>Add interaction terms to list of test variables if needed</i>
------------	--

---

### Description

Add interaction terms to list of test variables if needed

### Usage

```
test_specs(test_var, int)
```

### Arguments

test_var	List of variables to use for testing for regress or logistic
int	Interaction terms specified

### Details

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

### Value

A vector of variables names to test

### Examples

```
test_specs("a", c("a:b", "b:c"))
```

---

var_check	<i>Check if main effects for all interaction effects are included in the model If ':' is used to select a range _evar_ is updated</i>
-----------	---

---

### Description

Check if main effects for all interaction effects are included in the model If ':' is used to select a range \_evar\_ is updated

### Usage

```
var_check(ev, cn, intv = "")
```

### Arguments

ev	List of explanatory variables provided to _regress_ or _logistic_
cn	Column names for all explanatory variables in _dat_
intv	Interaction terms specified

**Details**

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

**Value**

'vars' is a vector of right-hand side variables, possibly with interactions, 'iv' is the list of explanatory variables, and intv are interaction terms

**Examples**

```
var_check("a:d", c("a", "b", "c", "d"))
var_check(c("a", "b"), c("a", "b"), "a:c")
```

---

write.coeff	<i>Write coefficient table for linear and logistic regression</i>
-------------	---

---

**Description**

Write coefficient table for linear and logistic regression

**Usage**

```
write.coeff(object, file = "", sort = FALSE)
```

**Arguments**

object	A fitted model object of class regress or logistic
file	A character string naming a file. "" indicates output to the console
sort	Sort table by variable importance

**Details**

Write coefficients and importance scores to csv

**Examples**

```
regress(diamonds, rvar = "price", evar = "carat:x", check = "standardize") %>%
  write.coeff(sort = TRUE) %>%
  formatdf(dec = 3)
```

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