

# Package ‘radiant.design’

February 10, 2018

**Type** Package

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

**Version** 0.9.0

**Date** 2018-1-8

**Description** The Radiant Design menu includes interfaces for design of experiments, sampling, and sample size calculation. The application extends the functionality in radiant.data.

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

**Imports** dplyr (>= 0.7.4),  
shiny (>= 1.0.5),  
AlgDesign (>= 1.1.7.3),  
rstudioapi (>= 0.7),  
import (>= 1.1.0),  
polycor,  
methods

**Suggests** testthat (>= 2.0.0)

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

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

**License** AGPL-3 | file LICENSE

**LazyData** true

**RoxygenNote** 6.0.1

## R topics documented:

doe . . . . .	2
radiant.design . . . . .	3
radiant.design_viewer . . . . .	3
rndnames . . . . .	4
sample_size . . . . .	4
sample_size_comp . . . . .	5
sampling . . . . .	6
summary.doe . . . . .	7

summary.sample_size . . . . .	7
summary.sample_size_comp . . . . .	8
summary.sampling . . . . .	9

<b>Index</b>	<b>10</b>
--------------	-----------

---

doe	<i>Create (partial) factorial design</i>
-----	--

---

## Description

Create (partial) factorial design

## Usage

```
doe(factors, int = "", trials = NA, seed = NA)
```

## Arguments

factors	Categorical variables used as input for design
int	Vector of interaction terms to consider when generating design
trials	Number of trial to create. If NA then all feasible designs will be considered until a design with perfect D-efficiency is found
seed	Random seed to use as the starting point

## Details

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

## Value

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

## See Also

[summary.doe](#) to summarize results

## Examples

```
"price; $10; $13; $16\nfood; popcorn; gourmet; no food" %>% doe
```

---

radiant.design	<i>radiant.design</i>
----------------	-----------------------

---

**Description**

radiant.design  
Launch radiant.design in default browser

**Usage**

```
radiant.design()
```

**Details**

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

**Examples**

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

---

radiant.design_viewer	<i>Launch radiant.design in the Rstudio viewer</i>
-----------------------	--

---

**Description**

Launch radiant.design in the Rstudio viewer

**Usage**

```
radiant.design_viewer()
```

**Details**

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

**Examples**

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

---

<code>rndnames</code>	<i>100 random names</i>
-----------------------	-------------------------

---

**Description**

100 random names

**Usage**

```
data(rndnames)
```

**Format**

A data frame with 100 rows and 2 variables

**Details**

A list of 100 random names generated by [listofrandomnames.com](http://listofrandomnames.com). Description provided in `attr(rndnames,"description")`

---

<code>sample_size</code>	<i>Sample size calculation</i>
--------------------------	--------------------------------

---

**Description**

Sample size calculation

**Usage**

```
sample_size(type, err_mean = 2, sd_mean = 10, err_prop = 0.1,
  p_prop = 0.5, conf_lev = 1.96, incidence = 1, response = 1,
  pop_correction = "no", pop_size = 1e+06)
```

**Arguments**

<code>type</code>	Choose "mean" or "proportion"
<code>err_mean</code>	Acceptable Error for Mean
<code>sd_mean</code>	Standard deviation for Mean
<code>err_prop</code>	Acceptable Error for Proportion
<code>p_prop</code>	Initial proportion estimate for Proportion
<code>conf_lev</code>	Confidence level
<code>incidence</code>	Incidence rate (i.e., fraction of valid respondents)
<code>response</code>	Response rate
<code>pop_correction</code>	Apply correction for population size ("yes","no")
<code>pop_size</code>	Population size

**Details**

See [https://radiant-rstats.github.io/docs/design/sample\\_size.html](https://radiant-rstats.github.io/docs/design/sample_size.html) for an example in Radiant

**Value**

A list of variables defined in sample\_size as an object of class sample\_size

**See Also**

[summary.sample\\_size](#) to summarize results

**Examples**

```
result <- sample_size(type = "mean", err_mean = 2, sd_mean = 10)
```

---

sample\_size\_comp

*Sample size calculation for comparisons*


---

**Description**

Sample size calculation for comparisons

**Usage**

```
sample_size_comp(type, n = NULL, p1 = NULL, p2 = NULL, delta = NULL,
  sd = NULL, conf_lev = NULL, power = NULL, ratio = 1,
  alternative = "two.sided")
```

**Arguments**

type	Choose "mean" or "proportion"
n	Sample size
p1	Proportion 1 (only used when "proportion" is selected)
p2	Proportion 2 (only used when "proportion" is selected)
delta	Difference in means between two groups (only used when "mean" is selected)
sd	Standard deviation (only used when "mean" is selected)
conf_lev	Confidence level
power	Power
ratio	Sampling ratio (n1 / n2)
alternative	Two or one sided test

**Details**

See [https://radiant-rstats.github.io/docs/design/sample\\_size\\_comp.html](https://radiant-rstats.github.io/docs/design/sample_size_comp.html) for an example in Radiant

**Value**

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

**See Also**

`summary.sample_size_comp` to summarize results

---

sampling	<i>Simple random sampling</i>
----------	-------------------------------

---

**Description**

Simple random sampling

**Usage**

```
sampling(dataset, var, sample_size, seed = NA, 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	The variable to sample from
sample_size	Number of units to select
seed	Random seed to use as the starting point
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/design/sampling.html> for an example in Radiant

**Value**

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

**See Also**

`summary.sampling` to summarize results

**Examples**

```
result <- sampling("rndnames", "Names", 10)
```

---

summary.doe	<i>Summary method for doe function</i>
-------------	--

---

**Description**

Summary method for doe function

**Usage**

```
## S3 method for class 'doe'  
summary(object, eff = TRUE, part = TRUE, full = TRUE, ...)
```

**Arguments**

object	Return value from <a href="#">doe</a>
eff	If TRUE print efficiency output
part	If TRUE print partial factorial
full	If TRUE print full factorial
...	further arguments passed to or from other methods.

**Details**

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

**See Also**

[doe](#) to calculate results

**Examples**

```
"price; $10; $13; $16\nfood; popcorn; gourmet; no food" %>% doe %>% summary
```

---

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

---

**Description**

Summary method for the sample\_size function

**Usage**

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

**Arguments**

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

## Details

See [https://radiant-rstats.github.io/docs/design/sample\\_size.html](https://radiant-rstats.github.io/docs/design/sample_size.html) for an example in Radiant

## See Also

[sample\\_size](#) to generate the results

## Examples

```
result <- sample_size(type = "mean", err_mean = 2, sd_mean = 10)
summary(result)
```

---

```
summary.sample_size_comp
```

*Summary method for the sample\_size\_comp function*

---

## Description

Summary method for the sample\_size\_comp function

## Usage

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

## Arguments

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

## Details

See [https://radiant-rstats.github.io/docs/design/sample\\_size\\_comp.html](https://radiant-rstats.github.io/docs/design/sample_size_comp.html) for an example in Radiant

## See Also

[sample\\_size\\_comp](#) to generate the results



---

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

---

## Description

Summary method for the sampling function

## Usage

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

## Arguments

object	Return value from <a href="#">sampling</a>
prn	Print full sampling frame. Default is TRUE
...	further arguments passed to or from other methods

## Details

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

## See Also

[sampling](#) to generate the results

## Examples

```
set.seed(1234)  
result <- sampling("rndnames", "Names", 10)  
summary(result)
```

# Index

## \*Topic **datasets**

    rndnames, [4](#)

doe, [2](#), [7](#)

radiant.design, [3](#)

radiant.design-package  
    (radiant.design), [3](#)

radiant.design\_viewer, [3](#)

rndnames, [4](#)

sample\_size, [4](#), [7](#), [8](#)

sample\_size\_comp, [5](#), [8](#)

sampling, [6](#), [9](#)

summary.doe, [2](#), [7](#)

summary.sample\_size, [5](#), [7](#)

summary.sample\_size\_comp, [6](#), [8](#)

summary.sampling, [6](#), [9](#)