

# Package ‘radiant.design’

April 22, 2018

**Type** Package

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

**Version** 0.9.3

**Date** 2018-4-18

**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 (>= 3.4.0),  
radiant.data (>= 0.9.3.0),  
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

**Encoding** UTF-8

**RoxygenNote** 6.0.1

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doe	<i>Create (partial) factorial design</i>
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**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
```

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<code>radiant.design</code>	<i><code>radiant.design</code></i>
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**Description**`radiant.design`

Launch `radiant.design` in the 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)
```

---

<code>radiant.design_viewer</code>	<i>Launch <code>radiant.design</code> in the Rstudio viewer</i>
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**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)
```

---

`radiant.design_window` *Launch radiant.design in an Rstudio window*

---

### Description

Launch `radiant.design` in an Rstudio window

### Usage

```
radiant.design_window()
```

### Details

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

### Examples

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

---

`rndnames` *100 random names*

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### 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")`

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sample_size	<i>Sample size calculation</i>
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## 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

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

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`sample_size_comp`*Sample size calculation for comparisons*

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## 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

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

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sampling	<i>Simple random sampling</i>
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**Description**

Simple random sampling

**Usage**

```
sampling(dataset, var, sample_size, seed = NA, data_filter = "")
```

**Arguments**

dataset	Dataset to sample from
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., 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/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)
```

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summary.doe	<i>Summary method for doe function</i>
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**Description**

Summary method for doe function

**Usage**

```
## S3 method for class 'doe'  
summary(object, eff = TRUE, part = TRUE, full = TRUE,  
  dec = 3, ...)
```

**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
dec	Number of decimals to show
...	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>
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**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)
```



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`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

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`summary.sampling`*Summary method for the sampling function*

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**Description**

Summary method for the sampling function

**Usage**

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

**Arguments**

object	Return value from <a href="#">sampling</a>
prn	Print full sampling frame. 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/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)
```

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