Package 'arena2r'

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Type Package

Title Plots, Summary Statistics and Tools for Arena Simulation Users

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Description Reads Arena <https://www.arenasimulation.com/> CSV output files and generates nice tables and plots. The package contains a Shiny App that can be used to interactively visualize Arena's results.

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Encoding UTF-8

LazyData true

Imports stats, utils, rlang, tidyr, magrittr, dplyr, purrr, shiny, shinydashboard, shinyBS, shinyjs, ggplot2

Depends R (>= 2.10)

Suggests testthat, covr, knitr, rmarkdown

RoxygenNote 6.1.0

URL https://github.com/pedroliman/arena2r

BugReports https://github.com/pedroliman/arena2r/issues

VignetteBuilder knitr

NeedsCompilation no

Repository CRAN

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`arena_results` *Test Dataset with Arena Results*

Description

A dataset containing test data from an Arena simulation model

Usage

```
arena_results
```

Format

A data frame with 2280 rows and 4 variables:

Scenario The Scenario Name

Statistic The Statistic's description

Replication The Replication Number

Value The numeric value of the statistic within the replication and scenario

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`get_simulation_results` *Get Results from Arena CSV Files*

Description

This function reads all csv files inside the provided path and returns a data.frame with the simulation runs, consolidated. You should provide a path containing only csv files generated by Arena, with the same number of replications. I Suggest you to name your csv files after your scenarios.

Usage

```
get_simulation_results(source, source_type = "path")
```

Arguments

`source`	The path where csv files is stored, or a list coming from shiny. If you do not provide a value, I'll assume they're on your current working directory.
`source_type`	String that describes where the data is coming from. "path" stands for a path that contains all csv files. "shinyInput" stands for the list object returned by fileInput in the ShinyApp.

Value

a tidy dataframe with simulation results.

Examples

```
# Define de path where your csv files are:
path <- system.file("extdata", package = "arena2r")
simulation_results = get_simulation_results(path)
head(simulation_results)
```

`get_statistics_summary` *Get Statistics Summary*

Description

Makes a summary table to every statistic available

Usage

```
get_statistics_summary(sim_results, confidence = 0.95)
```

Arguments

`sim_results`	The data.frame generated by get_simulation_results()
`confidence`	The confidence of the CI

Value

a data.frame with a summary for every Statistic

Examples

```
library(arena2r)

statistics_summary = get_statistics_summary(arena_results)
head(statistics_summary)
```

plot_box *Box Plot*

Description

Plots a box plot for a response variable, across different simulated scenarios.

Usage

```
plot_box(sim_results, response_variable)
```

Arguments

sim_results	The data.frame generated by get_simulation_results()
response_variable	A character string indicating the Statistic to be plotted.

Value

a box plot using ggplot2.

Examples

```
library(arena2r)

plot_box(arena_results, "Entity 1.NumberOut")
```

plot_confint *Confidence Interval Plot*

Description

Plots the confidence interval for a response variable, across different simulated scenarios.

Usage

```
plot_confint(sim_results, response_variable)
```

Arguments

sim_results	The data.frame generated by get_simulation_results()
response_variable	A character string indicating the Statistic to be plotted.

Value

a confidence interval plot using ggplot2.

Examples

```
library(arena2r)

plot_confint(arena_results, "Entity 1.WaitTime")
```

`plot_scatter` *Scatter Plot*

Description

Scatter Plot

Usage

```
plot_scatter(sim_results, x_variable, y_variable)
```

Arguments

`sim_results`	The data.frame generated by get_simulation_results()
`x_variable`	The name of the Statistic to be placed on the x axis
`y_variable`	The name of the Statistic to be placed on the y axis

Value

a scatter plot showing individual replication results

Examples

```
library(arena2r)

plot_scatter(arena_results, "Entity 1.NumberOut","Entity 1.WaitTime")
```

`runArenaApp` *Run Arena App*

Description

This function will launch a Shiny App allowing you to analyse Arena results without writing R code.

Usage

```
runArenaApp()
```

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