

# Package ‘arena2r’

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**Type** Package

**Title** Plots, Summary Statistics and Tools for Arena Simulation Users

**Version** 1.0.0

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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.

**License** MIT + file LICENSE

**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	<i>Test Dataset with Arena Results</i>
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### 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	<i>Get Results from Arena CSV Files</i>
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### 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)
```

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*get\_statistics\_summary*  
*Get Statistics Summary*

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**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)
```

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`plot_box`*Box Plot*

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**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")
```

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plot\_scatter

*Scatter Plot*


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**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")
```

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runArenaApp

*Run Arena App*


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**Description**

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

**Usage**

```
runArenaApp()
```

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