Package 'simmer.plot'

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Type Package

Title Plotting Methods for 'simmer'

Version 0.1.13

Description A set of plotting methods for 'simmer' trajectories and simulations.

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Encoding UTF-8

URL http://r-simmer.org, https://github.com/r-simmer/simmer.plot

BugReports https://github.com/r-simmer/simmer.plot/issues

Depends R (>= 3.1.2), simmer (>= 3.6.0), ggplot2 (>= 2.2.0)

Imports DiagrammeR (>= 1.0.0), dplyr (>= 0.7.0), tidyr (>= 0.7.0), scales, utils

Suggests testthat, knitr, rmarkdown

ByteCompile yes

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VignetteBuilder knitr

NeedsCompilation no

Author Iñaki Ucar [aut, cph, cre] (<https://orcid.org/0000-0001-6403-5550>), Bart Smeets [aut, cph]

Maintainer Iñaki Ucar <i.ucar86@gmail.com>

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R topics documented:

simmer.plot-package **simmer.plot**: *Plotting Methods for* **simmer**

Description

A set of plotting methods for **simmer** trajectories and simulations.

Author(s)

Iñaki Ucar, Bart Smeets

See Also

simmer's homepage http://r-simmer.org and GitHub repository https://github.com/r-simmer/simmer.plot.

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get_mon *Monitoring Statistics*

Description

Replacements for get_mon_arrivals, get_mon_attributes and get_mon_resources. These versions just add a new class (arrivals, attributes or resources respectively) to the resulting data frame.

Usage

```
get_mon_arrivals(...)

get_mon_attributes(...)

get_mon_resources(...)
```

Arguments

...	see get_mon.

Value

Returns a data frame of class arrivals, attributes or resources.

plot.mon *Plot Methods for* simmer *Monitoring Statistics*

Description

Methods for the plot generic.

Usage

```
## S3 method for class 'arrivals'
plot(x, metric = c("activity_time", "waiting_time",
  "flow_time"), ...)

## S3 method for class 'attributes'
plot(x, metric = NULL, keys, ...)

## S3 method for class 'resources'
plot(x, metric = c("usage", "utilization"), names, ...)
```

Arguments

x	a data frame of class arrivals/attributes/resources (see get_mon).
metric	specific metric to compute.
...	further arguments
	items, **for** plot.resources(metric="usage") components of the resource to plot, one or more of c("system", "queue", "server").
	steps, **for** plot.resources(metric="usage") if TRUE, shows the instantaneous usage instead of the cumulative average.
keys	attributes to plot (if left empty, all attributes are shown).
names	resources to plot (if left empty, all resources are shown).

Value

Returns a ggplot2 object.

Examples

```
t0 <- trajectory("my trajectory") %>%
  ## add an intake activity
  seize("nurse", 1) %>%
  timeout(function() rnorm(1, 15)) %>%
  release("nurse", 1) %>%
  ## add a consultation activity
  seize("doctor", 1) %>%
  timeout(function() rnorm(1, 20)) %>%
  release("doctor", 1) %>%
```

```
  ## add a planning activity
  seize("administration", 1) %>%
  timeout(function() rnorm(1, 5)) %>%
  release("administration", 1)

env <- simmer("SuperDuperSim") %>%
  add_resource("nurse", 1) %>%
  add_resource("doctor", 2) %>%
  add_resource("administration", 1) %>%
  add_generator("patient", t0, function() rnorm(1, 10, 2)) %>%
  run(until=80)

resources <- get_mon_resources(env)
arrivals <- get_mon_arrivals(env)

plot(resources, metric="usage", "doctor", items = "server", steps = TRUE)
plot(resources, metric="utilization", c("nurse", "doctor", "administration"))
plot(arrivals, metric="waiting_time")
```

`plot.simmer` *Plot Method for* `simmer` *Objects*

Description

Deprecated. See `plot.mon` instead.

Usage

```
## S3 method for class 'simmer'
plot(x, what = c("resources", "arrivals", "attributes"),
  metric = NULL, ...)
```

Arguments

`x`	a single simmer environment or a list of environments representing several replications.
`what`	type of plot, one of `c("resources", "arrivals", "attributes")`.
`metric`	specific metric for each type of plot.
	`what = "resources"` one of `c("usage", "utilization")`.
	`what = "arrivals"` one of `c("activity_time", "waiting_time", "flow_time")`.
	`what = "attributes"` no metrics at the moment.
`...`	further arguments for each kind of plot.
	`what = "resources"` **all metrics** `names` the name of the resource(s) (a single string or a character vector) to show.
	`metric = "usage"` `items` the components of the resource to be plotted, one or more of `c("system", "queue", "server")`.

steps if TRUE, shows the instantaneous usage instead of the cumulative average.

what = "attributes" **keys** the keys of attributes you want to plot (if left empty, all attributes are shown).

Value

Returns a ggplot2 object.

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plot.trajectory *Plot Method for* trajectory *Objects*

Description

A method for the plot generic that plots a diagram of the given trajectory.

Usage

```
## S3 method for class 'trajectory'
plot(x, engine = "dot",
  fill = scales::brewer_pal("qual"), verbose = FALSE, ...)
```

Arguments

x	a simmer trajectory.
engine	a string specifying a layout engine (see grViz).
fill	discrete color palette for resource identification.
verbose	show additional info directly in the labels.
...	additional parameters for render_graph.

Value

Returns an htmlwidget.

Examples

```
x <- trajectory() %>%
  seize("res", 1) %>%
  timeout(1) %>%
  release("res", 1) %>%
  rollback(3)

plot(x)
```

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