Package 'ErlangC'

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Type Package

Title Solve Erlang-C Model

Version 0.1.0

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Description Provides a set of functions to solve Erlang-C model. The Erlang C formula was invented by the Danish Mathematician A.K. Erlang and is used to calculate the number of advisors and the service level.

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Encoding UTF-8

LazyData true

Imports bsicons, bslib, DT, gmp, lubridate, shiny, tidyr

RoxygenNote 7.3.2

Depends R (>= 2.10)

Suggests testthat (>= 3.0.0)

Config/testthat/edition 3

NeedsCompilation no

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Contents

`calculate_agents` *Calculate Required Number of Agents This function calculates the required number of agents to achieve a specified service level and occupancy.*

Description

Calculate Required Number of Agents This function calculates the required number of agents to achieve a specified service level and occupancy.

Usage

```
calculate_agents(
  call_count,
  call_period,
  avg_handle_time,
  target_anser_time,
  require_service_level,
  max_occupancy,
  shrinkage,
  max_agents = NULL
)
```

Arguments

`call_count`	Numeric. The total number of incoming calls.
`call_period`	Duration. The time period over which calls are counted.
`avg_handle_time`	Duration. The average time taken to handle a call.
`target_anser_time`	Duration. The targeted time to answer a call.
`require_service_level`	Numeric. The required service level.
`max_occupancy`	Numeric. The maximum allowed occupancy level .
`shrinkage`	Numeric. The shrinkage factor to account for non-productive time .
`max_agents`	Integer. The maximum number of agents allowed.

Value

A list containing the calculated metrics and the number of agents required.

Examples

```
calculate_agents(
  call_count = 100,
  call_period = lubridate::duration(30, "minutes"),
  avg_handle_time = lubridate::duration(180, "seconds"),
  target_anser_time = lubridate::duration(20, "seconds"),
  require_service_level = 0.8,
  max_occupancy = 0.85,
  shrinkage = 0.3,
  max_agents = 200
)
```

`erlang_c` *Erlang C*

Description

Calculate the performance metrics of an Erlang C model with `n` agents.

Usage

```
erlang_c(call_count, call_period, avg_handle_time, target_anser_time, n)
```

Arguments

`call_count`	Numeric. The total number of incoming calls.
`call_period`	Duration. The time period over which calls are counted.
`avg_handle_time`	Duration. The average time taken to handle a call.
`target_anser_time`	Duration. The targeted time to answer a call.
`n`	Integer. The number of agents.

Value

A list containing the calculated metrics.

Examples

```
erlang_c(
  call_count = 100,
  call_period = lubridate::duration(30, "minutes"),
  avg_handle_time = lubridate::duration(180, "seconds"),
  target_anser_time = lubridate::duration(20, "seconds"),
  n = 14
)
```

erlang_c_app *Shiny App for Erlang C Calculator*

Description

This function creates a Shiny app for calculating Erlang C metrics.

Usage

```
erlang_c_app(language = "en")
```

Arguments

language	Character. The language to use for translations (default: "en").

Value

A Shiny app object.

translations *Translations*

Description

This dataset contains translations for all the strings used in the app. It is used to create a Shiny string translation interface.

Usage

```
translations
```

Format

A data frame with variables:

key The key of the string to translate

en The translation in English

zh The translation in Chinese

Source

Local

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