Package 'WeibullR.learnr'

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Type Package

Title An Interactive Introduction to Life Data Analysis

Version 0.1.3

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https://github.com/paulgovan/WeibullR.learnr

BugReports https://github.com/paulgovan/WeibullR.learnr/issues

Description An interactive introduction to Life Data Analysis that depends on 'WeibullR' by David Silkworth and Jurgen Symynck (2022) <https://CRAN.R-project.org/package=WeibullR>, a R package for Weibull Analysis, and 'learnr' by Garrick Aden-Buie et al. (2023) <https://CRAN.R-project.org/package=learnr>, a framework for building interactive learning modules in R.

Imports learnr, WeibullR

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Contents

`avail` *Availability.*

Description

Availability.

Usage

```
avail(unavailTime, totalTime)
```

Arguments

`unavailTime`	Unavailable Time. A numeric value representing the unavailable time or a numeric vector of unavailable times.
`totalTime`	Total Time. A numeric value representing the total time for a given period or a numeric vector of time periods

Value

The function returns a numeric value representing the availability for a given period.

Examples

```
unavail <- 100
total <- 1000
avail(unavail, total)
```

`fr` *Failure Rate (lambda).*

Description

Failure Rate (lambda).

Usage

```
fr(failures, totalTime)
```

Arguments

failures	Failures. A numeric value representing the number of failures for a given period.
totalTime	Total Time. A numeric value representing the total time for a given period or a numeric vector of time periods

Value

The function returns a numeric value representing the failure rate (lambda) for a given period.

Examples

```
fail <- 75
total <- 5000
fr(fail, total)
```

---

mtbf *Mean Time Between Failures (MTBF).*

Description

Mean Time Between Failures (MTBF).

Usage

```
mtbf(failures, totalTime)
```

Arguments

failures	Failures. A numeric value representing the number of failures for a given period.
totalTime	Total Time. A numeric value representing the total time for a given period or a numeric vector of time periods

Value

The function returns a numeric value representing the MTBF for a given period.

Examples

```
fail <- 5
total <- 1000
mtbf(fail, total)
```

mttf *Mean Time To Failure (MTTF).*

Description

Mean Time To Failure (MTTF).

Usage

```
mttf(failures, totalTime)
```

Arguments

failures	Failures. A numeric value representing the number of failures for a given period.
totalTime	Total Time. A numeric value representing the total time for a given period or a numeric vector of time periods

Value

The function returns a numeric value representing the MTTF for a given period.

Examples

```
fail <- 5
total <- 1000
mttf(fail, total)
```

RAMR.learnr *Reliability, Availability, and Maintainability*

Description

RAMR.learnr is an interactive introduction to RAM analysis.

Usage

```
RAMR.learnr()
```

Value

This function does not return a value.

See Also

https://paulgovan.github.io/WeibullR.learnr/

Examples

```
if (interactive()) {
  RAMR.learnr()
}
```

`rel` *Reliability.*

Description

Reliability.

Usage

```
rel(outageTime, totalTime)
```

Arguments

`outageTime`	Forced Outage Time. A numeric value representing the forced outage time or a numeric vector of outage times.
`totalTime`	Total Time. A numeric value representing the total time for a given period or a numeric vector of time periods

Value

The function returns a numeric value representing the reliability for a given period.

Examples

```
outage <- 100
total <- 1000
rel(outage, total)
```

`serv` *Serviceability.*

Description

Serviceability.

Usage

```
serv(serviceTime, totalTime)
```

Arguments

`serviceTime`	Service Time. A numeric value representing the service time or a numeric vector of service times.
`totalTime`	Total Time. A numeric value representing the total time for a given period or a numeric vector of time periods

Value

The function returns a numeric value representing the serviceability factor for a given period.

Examples

```
service <- 900
total <- 1000
serv(service, total)
```

`WeibullR.learnr` *An Interactive Introduction to Life Data Analysis*

Description

WeibullR.learnr is an interactive introduction to Life Data Analysis.

Usage

```
WeibullR.learnr()
```

Value

This function does not return a value.

See Also

https://paulgovan.github.io/WeibullR.learnr/

Examples

```
if (interactive()) {
  WeibullR.learnr()
}
```

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