Package 'WeibullR.learnr'

November 4, 2024

Type Package

Title An Interactive Introduction to Life Data Analysis

Version 0.2

URL https://paulgovan.github.io/WeibullR.learnr/,
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, ReliaGrowR, WeibullR, WeibullR.ALT

Suggests WeibullR.plotly, WeibullR.shiny

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Encoding UTF-8

RoxygenNote 7.3.2

NeedsCompilation no

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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)
```

TestR.learnr *An Interactive Introduction to Reliability Testing*

Description

TestR.learnr is an interactive introduction to Reliability Testing.

Usage

```
TestR.learnr()
```

Value

This function does not return a value.

See Also

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

Examples

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

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