

# Package ‘nseq’

May 31, 2024

**Title** Count of Sequential Events

**Version** 0.1.1

**Description** Count the occurrence of sequences of values in a vector that meets certain conditions of length and magnitude. The method is based on the Run Length Encoding algorithm, available with base R, inspired by A. H. Robinson and C. Cherry (1967) <[doi:10.1109/PROC.1967.5493](https://doi.org/10.1109/PROC.1967.5493)>.

**License** MIT + file LICENSE

**Encoding** UTF-8

**RoxygenNote** 7.3.1

**Imports** checkmate

**Suggests** testthat (>= 3.0.0), ggplot2, dplyr

**Config/testthat/edition** 3

**Config/Needs/website** rmarkdown

**URL** <https://rfsaldanha.github.io/nseq/>

**BugReports** <https://github.com/rfsaldanha/nseq/issues>

**NeedsCompilation** no

**Author** Raphael Saldanha [aut, cre] (<<https://orcid.org/0000-0003-0652-8466>>)

**Maintainer** Raphael Saldanha <[raphael.de-freitas-saldanha@inria.fr](mailto:raphael.de-freitas-saldanha@inria.fr)>

**Repository** CRAN

**Date/Publication** 2024-05-31 14:00:02 UTC

## R topics documented:

shift . . . . .	2
trle . . . . .	2
trle_cond . . . . .	3
trle_cond_stat . . . . .	4

<b>Index</b>	<b>5</b>
--------------	----------

---

shift	<i>Shifts vector values to right or left</i>
-------	--

---

**Description**

Shifts vector values to right or left

**Usage**

```
shift(x, n, invert = FALSE, default = NA)
```

**Arguments**

x	Vector for which to shift values
n	Number of places to be shifted. Positive numbers will shift to the right by default. Negative numbers will shift to the left by default. The direction can be inverted by the invert parameter.
invert	Whether or not the default shift directions should be inverted.
default	The value that should be inserted by default.

**Value**

a vector.

**Examples**

```
# Lag
shift(c(2,3,5,6,7), n = 1, default = 0)
# Lead
shift(c(2,3,5,6,7), n = -1, default = 0)
```

---

trle	<i>Run Length Encoding and return result as a data frame</i>
------	--

---

**Description**

Given a tibble object and a variable y, this function will count the number of occurrence of each element in y in the sequence that they appear, and return this count as a tibble object.

**Usage**

```
trle(x)
```

**Arguments**

x                    a vector.

**Value**

a data.frame object.

**See Also**

[rle\(\)](#)

**Examples**

```
trle(c(8,15,20,0,0,0,0,5,9,12))
```

---

trle_cond	<i>Count the number of events in a sequence</i>
-----------	---

---

**Description**

This function will count the occurrence of sequential events that meets some conditions.

**Usage**

```
trle_cond(x, a_op = "gte", a, b_op = "gte", b, isolated = FALSE)
```

**Arguments**

x                    numeric vector.

a\_op, b\_op        character. Operator, gte = greater than or equal, lte = less than or equal, gt = greater than, lt = less than, e = equal.

a                    integer. Length of period threshold.

b                    integer. Value threshold.

isolated           logical. Consider only isolated events, i.e. surrounded by zeros. On this case, a and a\_op are not considered.

**Details**

Example: In a vector, how many sequences have at least 3 consecutive observations (a\_op = "gte", a = 3) with values equal or greater than 5 (b\_op = "gte", b = 5)?

**Value**

a numeric value.

**Examples**

```
# How many sequences have at least 3 consecutive observations with value equal or greater than 5?
trle_cond(x = c(8,15,20,0,0,0,0,5,9,12), a_op = "gte", a = 3, b_op = "gte", b = 5)
```

---

trle_cond_stat	<i>Statistics of events in a sequence</i>
----------------	---

---

**Description**

This function will compute statistics of sequential events that meets some conditions.

**Usage**

```
trle_cond_stat(x, b, b_op, stat)
```

**Arguments**

x	numeric vector.
b	integer. Value threshold.
b_op	character. Operator, gte = greater than or equal, lte = less than or equal, gt = greater than, lt = less than, e = equal.
stat	character. A statistic to be calculated. One of: max, min, mean, median, sd, var.

**Details**

Example: in a vector, what is the maximum size of sequences with values equal or greater than 5?

**Value**

a numeric value

**Examples**

```
# What is the maximum size of sequences with values equal or greater than 5?
trle_cond_stat(c(4,6,6,4,7,8,9), b = 5, b_op = "gte", stat = "max")
```

# Index

`rle()`, 3

`shift`, 2

`trle`, 2

`trle_cond`, 3

`trle_cond_stat`, 4