Package: RDP (via r-universe)

October 8, 2024

Title The Ramer-Douglas-Peucker Algorithm

Version 0.3.0

Description Pretty fast implementation of the Ramer-Douglas-Peucker algorithm for reducing the number of points on a 2D curve. Urs Ramer (1972), ``An iterative procedure for the polygonal approximation of plane curves'' <doi:10.1016/S0146-664X(72)80017-0>. David H. Douglas and Thomas K. Peucker (1973), ``Algorithms for the Reduction of the Number of Points Required to Represent a Digitized Line or its Caricature'' <doi:10.3138/FM57-6770-U75U-7727>.

License GPL-3

URL https://github.com/robertdj/RDP

Encoding UTF-8

Roxygen list(markdown = TRUE)

RoxygenNote 7.2.1

LinkingTo Rcpp

Imports Rcpp

Suggests testthat, withr, zeallot

Repository https://robertdj.r-universe.dev

RemoteUrl https://github.com/robertdj/rdp

RemoteRef HEAD

RemoteSha bedc097b263a455f5e58fc220f31db3cdd09580b

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Description

Implementation of the Ramer-Douglas-Peucker algorithm.

Author(s)

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References

Urs Ramer (1972), "An iterative procedure for the polygonal approximation of plane curves". *Computer Graphics and Image Processing* **1**, 244–256. doi:10.1016/S0146664X(72)800170.

David H. Douglas and Thomas K. Peucker (1973), "Algorithms for the Reduction of the Number of Points Required to Represent a Digitized Line or its Caricature". *Cartographica* **10**, 112–122. doi:10.3138/FM576770U75U7727.

See Also

Useful links:

- https://github.com/robertdj/RDP

RamerDouglasPeucker *Simplify a curve using the Ramer-Douglas-Peucker algorithm.*

Description

Implements the Ramer-Douglas-Peucker algorithm for reducing the number of points on a curve.

Usage

```
RamerDouglasPeucker(x, y, epsilon, keep_index = FALSE)
```

Arguments

x	[numeric] The x values of the curve as a vector without NA values.
y	[numeric] The y values of the curve as a vector without NA values.
epsilon	[positive numeric(1)] The threshold for filtering outliers from the simplified curve.
keep_index	[logical] If TRUE, returns a column called index with the index locations of points that are kept.

Details

If there are no more than two points it does not make sense to simplify. In this case the input is returned without further checks of `x` and `y`. In particular, the input is not checked for `NA` values.

Value

A `data.frame` with `x` and `y` values of the simplified curve.

Examples

```
RDP::RamerDouglasPeucker(x = c(0, 1, 3, 5), y = c(2, 1, 0, 1), epsilon = 0.5)
RDP::RamerDouglasPeucker(x = c(0, 1, 3, 5), y = c(2, 1, 0, 1), epsilon = 0.5, keep_index = TRUE)
```

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