Package 'lazygreedy'

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Title Applying the Lazy-Greedy Spanning Algorithm

Type Package

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Depends Rcpp

Description Provides an R wrapper for an efficient C++ implementation of the Lazy-Greedy spanning algorithm of Bouts, ten Brink, and Buchin (2014) <DOI:10.1145/2582112.2582154>.

License GPL (>= 2)

LinkingTo Rcpp, RcppArmadillo

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R topics documented:

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lazyGreedy	*Applying the Lazy-Greedy Algorithm*

Description

Function `lazyGreedy` is an R wrapper for an efficient C++ implementation of the Lazy-Greedy spanning algorithm. The C++ implementation executes many thousands of times faster than a pure R implementation. Both the algorithm and (most of) the C++ implementation were developed by Quirijn W. Bouts, Alex P. ten Brink, and Kevin Buchin.

Usage

```
lazyGreedy(V, t)
```

Arguments

V	a numeric n-by-2 matrix the ith row of which contains the location in R^2 of vertex i.
t	the desired dilation, a positive real number.

Value

Function `lazyGreedy` returns a greedy t-spanner for the set of vertices `V`. The result takes the form of an edge list.

References

Bouts, Q. W., ten Brink, A. P., and Buchin, K. (2014). A framework for computing the greedy spanner. In *30th ACM Symposium on Computational Geometry* (SoCG, Kyoto, Japan, June 8-11, 2014) (pp. 11-19). Association for Computing Machinery, Inc.

Examples

```
n = 20
V = cbind(runif(n), runif(n))
spanner = lazyGreedy(V, t = 2)

## Not run:
require("network")
G = network(spanner, directed = FALSE)
plot(G, coord = V, label = 1:n, jitter = FALSE)

## End(Not run)
```

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