Package 'RcppGreedySetCover'

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Title Greedy Set Cover

Version 0.1.1

Description A fast implementation of the greedy algorithm for the set cover problem using 'Rcpp'.

Depends R (>= 3.2.5)

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Encoding UTF-8

Imports data.table, Rcpp (>= 0.12.14)

LinkingTo BH, Rcpp (>= 0.12.14)

Suggests testthat (>= 3.1.0)

Config/testthat/edition 3

URL https://github.com/matthiaskaeding/setcover/tree/main/rcpp_greedy_set_cover/

BugReports https://github.com/matthiaskaeding/setcover/issues

RoxygenNote 7.3.3

NeedsCompilation yes

Author Matthias Kaeding [aut, cre]

Maintainer Matthias Kaeding <matthiaskaeding@posteo.de>

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greedySetCover *Greedy Set Cover*

Description

Fast greedy set cover algorithm.

Usage

```
greedySetCover(X, data.table = TRUE)
```

Arguments

X	Two-column data.frame in long format: Column 1 identifies the sets, column 2 the elements.
data.table	If TRUE returns a data.table with keys given by sets and elements. If FALSE returns a data.frame, sorted by sets and elements.

Value

If data.table == TRUE a data.table, keyed by sets and elements. Else a data.frame, sorted by sets and elements. Column names are derived from input.

Examples

```
# Create some data.
set.seed(333)
X <- data.table::rbindlist(
  lapply(
    seq_len(1e4L),
    function(x) list(element=sample.int(n=1e3L,size=sample.int(50L,1L)))
  ),
  idcol="set"
)
# Elements are integers 1,2,...,1000.

# Run set cover
res <- greedySetCover(X,FALSE)
head(res)

# Check if all elements are covered.
identical(sort(unique(res$element)),sort(unique(X$element)))
```

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