

# Package ‘muRty’

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**Title** Murty's Algorithm for k-Best Assignments

**Version** 0.3.1

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**Description** Calculates k-best solutions and costs for an assignment problem following the method outlined in Murty (1968) <doi:10.1287/opre.16.3.682>.

**URL** <https://github.com/argonaut91/muRty>

**BugReports** <https://github.com/argonaut91/muRty/issues>

**Depends** R (>= 3.1.0)

**Imports** clue, lpSolve

**Suggests** testthat

**License** MIT + file LICENSE

**Encoding** UTF-8

**LazyData** true

**RoxygenNote** 7.0.2

**NeedsCompilation** no

**Repository** CRAN

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`get_k_best`*Murty's algorithm for k-best assignments*

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**Description**

Find k-best assignments for a given matrix (returns both solved matrices and costs).

**Usage**

```
get_k_best(  
  mat,  
  k_best = NULL,  
  algo = "hungarian",  
  by_rank = FALSE,  
  objective = "min",  
  proxy_Inf = 10000000L  
)
```

**Arguments**

<code>mat</code>	Square matrix (N x N) in which values represent the weights.
<code>k_best</code>	How many best scenarios should be returned. If <code>by_rank = TRUE</code> , this equals best ranks.
<code>algo</code>	Algorithm to be used, either 'lp' or 'hungarian'; defaults to 'hungarian'.
<code>by_rank</code>	Should the solutions with same cost be counted as one and stored in a sublist? Defaults to FALSE.
<code>objective</code>	Should the cost be minimized ('min') or maximized ('max')? Defaults to 'min'.
<code>proxy_Inf</code>	What should be considered as a proxy for Inf? Defaults to 10e06; if objective = 'max' the sign is automatically reversed.

**Value**

A list with solutions and costs (objective values).

**Examples**

```
set.seed(1)  
mat <- matrix(sample.int(15, 10*10, TRUE), 10, 10)  
  
get_k_best(mat, 3)
```

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