

# Package ‘ROI.models.netlib’

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**Type** Package

**Title** 'ROI' Optimization Problems Based on 'NETLIB-LP'

**Version** 1.1-2

**Description** A collection of 'ROI' optimization problems based on the 'NETLIB-LP' collection. 'Netlib' is a software repository, which amongst many other software for scientific computing contains a collection of linear programming problems. The purpose of this package is to make this problems easily accessible from 'R' as 'ROI' optimization problems.

**Depends** R (>= 3.5.0)

**Imports** ROI (>= 1.0-0)

**Suggests** Rglpk (>= 0.6-2)

**License** GPL-3

**RoxygenNote** 7.2.3

**NeedsCompilation** no

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**Repository** CRAN

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**Description**

If `x` is missing a character vector giving the names of all available problems is returned. If `x` is "all" a list containing all the optimization problems is returned. If `x` is the name of an optimization problem, the given optimization problem is returned. If `x` is "metainfo" a data.frame containing all the meta info is returned.

**Usage**

```
netlib(x=c("all", "metainfo", "adlittle", "afiro", "agg", "agg2",
          "agg3", "bandm", "beaconfd", "blend", "bnl1", "bnl2",
          "boeing1", "boeing2", "bore3d", "brandy", "capri", "cycle",
          "czprob", "d2q06c", "d6cube", "degen2", "degen3", "df1001",
          "e226", "etamacro", "fffff800", "finnis", "fit1d", "fit1p",
          "fit2d", "fit2p", "forplan", "ganges", "gfrd.pnc", "greenbea",
          "greenbeb", "grow15", "grow22", "grow7", "israel", "kb2",
          "lotfi", "maros.r7", "maros", "modszk1", "nesm", "perold",
          "pilot.ja", "pilot", "pilot.we", "pilot4", "pilot87",
          "pilotnov", "recipe", "sc105", "sc205", "sc50a", "sc50b",
          "scagr25", "scagr7", "scfxm1", "scfxm2", "scfxm3", "scorpion",
          "scrs8", "scsd1", "scsd6", "scsd8", "sctap1", "sctap2", "sctap3",
          "seba", "share1b", "share2b", "shell", "ship041", "ship04s", "ship081",
          "ship08s", "ship121", "ship12s", "sierra", "stair",
          "standata", "standmps", "stocfor1", "stocfor2", "stocfor3",
          "truss", "tuff", "vtp.base", "wood1p", "woodw", "x25fv47", "x80bau3b"))
```

**Arguments**

`x` a character giving the name of the optimization problem to be returned.

**Details**

Netlib is a software repository, which amongst many other software for scientific computing contains a collection of linear programming problems. The column `optimal_value` contains the results published in Koch (2004).

**References**

[NETLIB-LP] Koch, Thorsten (2004) The final NETLIB-LP results. Operations Research Letters <https://opus4.kobv.de/opus4-zib/files/727/ZR-03-05.pdf>

**Examples**

```
## Not run:
library(ROI)
library(ROI.models.netlib)
## list all available problems
netlib()
## get all problems as a list
ntlb <- netlib("all")
## get a certain problem by name
netlib("afiro")
ntlb[["afiro"]]
## get the meta info to the problems
netlib("metainfo")
## solve a problem
sol <- ROI_solve(netlib("afiro"))
sol
sol$objval - as.numeric(netlib("metainfo")["afiro", "final_results"])

## End(Not run)
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