
bsp_klausel.mod

param n; #Anzahl der Literale
param m; # Anzahl der Klauseln

var x{i in 1..n} binary;
var notx{i in 1..n} binary;
var z{i in 1..m} binary;

maximize profit: sum{i in 1..m} z[i];
subject to klausel1: x[1] + x[2] >= z[1];
subject to klausel2: notx[1] + notx[2] >= z[2];
subject to klausel3: x[1] + notx[6] >= z[3];
subject to klausel4: x[2] + x[3] >= z[4];
subject to klausel5: notx[2] + notx[3] >= z[5];
subject to klausel6: x[2] + x[4] >= z[6];
subject to klausel7: x[3] + x[4] >= z[7];
subject to klausel8: notx[3] + notx[4] >= z[8];
subject to klausel9: notx[4] + x[5] >= z[9];
subject to klausel10: notx[5] + x[6] >= z[10];
subject to gegen{i in 1..n}: x[i]+notx[i]=1;

bsp_klausel.dat

param n=6;
param m=10;

bsp_klausel.cmd

solve;

display x, notx, z, profit;

MINTO-OUTPUT

Job 1737139 sent to oldstyle.ie.lehigh.edu
password: FljUyJkV
----- Begin Solver Output -----
Executing /home/neos/neos-solvers/minto-ampl/minto-ampl-driver.py
File exists
You are using the solver mintoamp.
Executing AMPL.
processing data.
processing commands.

22 variables, all binary
16 constraints, all linear; 42 nonzeros
1 linear objective; 10 nonzeros.

MINTO (AMPL) v3.0: MINTO arg string (from AMPL options): ''

MINTO, a Mixed INTEger Optimizer -- version 3.1.0
(LINUX/COIN-OSI)
Copyright (C) 1992-2004 -- M.W.P. Savelsbergh

MINTO: Solving problem amplprob
MINTO: Problem statistics:

Number of constraints: 16
Number of variables: 22 (0)
Number of nonzero's: 42

Number of continuous variables: 0
Number of binary variables: 22
Number of integer variables: 0

MINTO: Row structure analysis (after preprocessing):
Number of constraints of type ALLBINUB: 10
Number of constraints of type BINSUM1EQ: 6

MINTO control parameters:
Objective sense : minimization
Output level : 1
Maximum cpu time : 1000000
Maximum #nodes : 1000000

MINTO system function activity levels:
Bound improvement : active
Branching type : 3
Node selection type : 5
Preprocessing level : 2
Primal heuristic : active
Clique cuts : active
Implication cuts : active
Knapsack covers : active

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GUB covers           : active
Flow covers          : active
Row management       : active
Restarts             : active
Force branching      : 1
Advanced basis       : active
Names mode level     : 0

```

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MINTO: Updating primal (Integral solution)
      Value:          9.00   Elapsed time:      0.00   Node:          2

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MINTO: Value of solution: -9.000000
MINTO: Non-zero variables in the solution:

```

```

xopt[1] = 1.000000 ()
xopt[2] = 1.000000 ()
xopt[6] = 1.000000 ()
xopt[9] = 1.000000 ()
xopt[10] = 1.000000 ()
xopt[11] = 1.000000 ()
xopt[12] = 1.000000 ()
xopt[13] = 1.000000 ()
xopt[14] = 1.000000 ()
xopt[15] = 1.000000 ()
xopt[17] = 1.000000 ()
xopt[18] = 1.000000 ()
xopt[19] = 1.000000 ()
xopt[20] = 1.000000 ()
xopt[21] = 1.000000 ()
zopt = -9.000000
zroot = -10.000000
zinit = -10.000000

```

MINTO: Branch and bound statistics

```

Maximum number of unevaluated nodes      =      1
Number of evaluated nodes                 =      3
Depth of the tree                         =      1
Number of linear programs solved          =      3
Maximum number of rows in active LP       =     16 (16)

```

MINTO: Cut generation statistics

```

Number of generated clique inequalities    =      0
Number of generated implication inequalities =      0
Number of generated lifted knapsack covers =      0
      Knapsack covers                     =      0
      Knapsack covers with GUBs           =      0
      Surrogate knapsack covers           =      0
Number of generated generalized flow covers =      0

```

APPL: Timing statistics (in seconds)

```

appl_bounds:                               0.00
appl_constraints:                           0.00

```

```

appl_delconstraints:      0.00
appl_divide:              0.00
appl_exit:                0.00
appl_fathom:              0.00
appl_feasible:            0.00
appl_init:                0.00
appl_initlp:              0.00
appl_mps:                  0.00
appl_node:                0.00
appl_preprocessing:       0.00
appl_primal:              0.00
appl_rank:                0.00
appl_terminatelp:         0.00
appl_terminatenode:       0.00
appl_variables:           0.00

```

MINTO: Timing statistics (in seconds)

```

Reading MPS file:         0.00
Restart:                  0.01
Preprocessing and probing: 0.00
Primal heuristic:         0.00
Bound improvement:        0.00
Clique cut generation:    0.00
Implication cut generation: 0.00
Knapsack cover generation: 0.00
GUB cover generation:     0.00
Surrogate knapsack cover generation: 0.00
Flow cover generation:    0.00
Cut pool search:          0.00
Cut Management:           0.00
Branching:                0.00
Time LP solving:          0.00

Total elapsed time:       0.01

```

```

:      x notx      z      :=
1      0      1      1
2      1      0      1
3      1      0      1
4      0      1      1
5      0      1      0
6      0      1      1
7      .      .      1
8      .      .      1
9      .      .      1
10     .      .      1
;

```

profit = 9

MINOS-OUTPUT

ungeeigneter Solver

Job 1737142 sent to schwinn.mcs.anl.gov

password: INnlZwPS

----- Begin Solver Output -----

Executing /home/neosotc/neos-5-solvers/minos-ampl/minos-driver.py

File exists

You are using the solver minos.

Executing AMPL.

processing data.

processing commands.

22 variables, all binary

16 constraints, all linear; 42 nonzeros

1 linear objective; 10 nonzeros.

MINOS 5.51: ignoring integrality of 22 variables

MINOS 5.51: optimal solution found.

15 iterations, objective 10

:	x	notx	z	:=
1	0.5	0.5	1	
2	0.5	0.5	1	
3	0.5	0.5	1	
4	0.5	0.5	1	
5	0.5	0.5	1	
6	0.5	0.5	1	
7	.	.	1	
8	.	.	1	
9	.	.	1	
10	.	.	1	

;

profit = 10