

\$onsymxref

\$onsymlist

\$title Maryam Etemadi

sets

i read /1\*6/

j snp /1\*6/

k cluster /1\*2/

;

Table c(i,j) distance between reads

1 2 3 4 5 6

1 0 5 6 3 3 4

2 0 0 5 4 3 3

3 0 0 0 4 5 6

4 0 0 0 0 6 6

5 0 0 0 0 0 5

6 0 0 0 0 0 0

;

Variables

$w(i,j,k)$

$y_i(i,k)$

$y_j(j,k)$

M

ObjectiveFunction

;

Binary Variables  $w, y_i, y_j$ ;

Positive Variable M;

Equations

obj

$c_1(i,j,k)$

$c_2(i,j,k)$

$c_3(i,j,k)$

$c_4(i)$

$c_5$

$c_6$

;

obj .. ObjectiveFunction =e= sum((i,j,k),c(i,j)\*w(i,j,k))-M ;

$c_1(i,j,k).. (w(i,j,k)-y_i(i,k)) =l= 0 ;$

$$c2(i,j,k).. (w(i,j,k)-y_j(j,k)) =l= 0 ;$$

$$c3(i,j,k).. (-w(i,j,k)+y_i(i,k)+y_j(j,k)) =l= 1 ;$$

$$c4(i).. \text{sum}(k,y_i(i,k))=e= 1;$$

$$c5.. \text{sum}(i,y_i(i,'1'))- \text{sum}(i,y_i(i,'2'))-M =e= 0;$$

$$c6.. \text{sum}(i,y_i(i,'1'))- \text{sum}(i,y_i(i,'2'))+M =e= 0;$$

Model cluster /all/;

Option MIP = Cplex;

Solve cluster using MIP maximizing ObjectiveFunction;

Display w.l,yi.l,yj.l,M.l,ObjectiveFunction.l;

The NEOS SERVER ANSWER IS THE FOLLOWING ANSWER WHICH ARE WRONG:

81 VARIABLE yi.L

	1	2
1	1.000	
2	1.000	
3		1.000
4	1.000	
5		1.000
6		1.000

---- 81 VARIABLE yj.L

	1	2
2	1.000	1.000
3	1.000	1.000
4	1.000	1.000
5	1.000	1.000
6	1.000	1.000