

GAMS solution to June Challenge

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binary variables x1,x2,x3,u1,u2,u3;
variable OF;
Of.lo=0;
equations eq1,eq2,eq3,eq4,eq5,eq6;
eq1 .. x1=e=u1;
eq2 .. x2=e=1-u2;
eq3 .. x3=e=1-u1;
eq4 .. x1+x2+x3=e=1;
eq5 .. u1+u2+u3=e=1;
eq6 .. OF=e=0;
model JuneChallenge /all/;
solve JuneChallenge using mip min OF;
display x1.l,x2.l,x3.l,u1.l,u2.l,u3.l;
-----
```

xi is a binary variable demonstrating the True/False of statement i
Ui is a binary variable demonstrating the existence of ball in box i or not

result is

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15 VARIABLE x1.L = 0.000
      VARIABLE x2.L = 0.000
      VARIABLE x3.L = 1.000
      VARIABLE u1.L = 0.000
      VARIABLE u2.L = 1.000
      VARIABLE u3.L = 0.000
```

So the ball is in box 2 (u2=1)

the first two statements are wrong (x1=0, x2=0) and the last one is true (x3=1)

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