model:

sets:

a/1..3/:m;

b/1..4/:n;

link(a,b):c,x;

endsets

data:

m=2500,2500,5000;

n=1500,2000,3000,3500;

c=10,5,6,7,8,2,7,6,9,3,4,8;

enddata

max=@sum(link:c\*x);

@for(a(j):@sum(a(i):x(i,j))=n(j));

@for(a(i):@sum(b(j):x(i,j))=m(i));

End

model:

min=p1\*d1+p2\*(d2+d3+d4)+p3\*(d5\_+d6\_);

2.5\*x1+2.5\*x2+5\*x3+d1\_-d1=450;

x1+d2\_-d2=30;

-x1+x2+d3\_-d3=30;

-x2+x3+d4\_-d4=0;

x1+d5\_-d5=24;

x2+d6\_-d6=30;

x1>=0;

x2>=0;

x3>=0;

d1>=0;

d1\_>=0;

d2>=0;

d2\_>=0;

d3>=0;

d3\_>=0;

d4>=0;

d4\_>=0;

d5>=0;

d5\_>=0;

d6>=0;

d6\_>=0;

@gin(x1);

@gin(x2);

@gin(x3);

p1=1000;

p2=100;

p3=10;

End

model:

sets:

m/1..5/:;

n/1..5/:;

link(n,m):o,x;

endsets

data:

o=25 29 31 42 37

39 38 26 20 33

34 27 28 40 32

24 42 36 23 45

24 27 26 20 32;

enddata

min=@sum(link:o\*x);

@for(n(i):@sum(m(j):x(i,j))=1);

@for(m(j):@sum(n(i):x(i,j))=1);

@for(link:@bin(x));

end

model:

sets:

m/1..3/:;

n/1..6/:;

link(n,m):x,y,z;

endsets

data:

x=0 0 0 3 5 4 7 10 6 9 11 11 12 11 12 13 11 12;

y=0 0 0 1 1 1 2 2 2 3 3 3 4 4 4 5 5 5;

enddata

max=@sum(link(i,j):x(i,j)\*z(i,j));

@for(link:@bin(z));

@for(m(j):@sum(link(k,j):z(k,j))=1);

@sum(link(i,j):y(i,j)\*z(i,j))=5;

end

model:

sets:

m/vs,v1,v2,v3,vt/;

link(m,m)/vs v1,vs v2,v2 v1,v2 v3,v1 v3,v1 vt,v3 vt/:a,b,c;

endsets

data:

a=4 1 2 3 6 1 2;

b=10 8 5 10 2 7 4;

enddata

submodel maxflow:

max=flow;

endsubmodel

submodel minfy:

min=@sum(link:a\*c);

endsubmodel

submodel con:

@for(m(i)|i #ne# 1 #and# i #ne# @size(m):

@sum(link(i,j):c(i,j))-@sum(link(j,i):c(j,i))=0);

@sum(link(i,j)|i #eq# 1:c(i,j))=flow;

@for(link:@bnd(0,c,b));

endsubmodel

calc:

@solve(maxflow,con);

flow=flow;

@solve(minfy,con);

endcalc

end