

附录 A:

schedule.mod:

```
#!/ * Parameters * /
param n>0 integer; #/ * the number of course * /
param t>0 integer; #/ * the number of time point * /
param m>0 integer; #/ * the maximum number of choosed course * /

#!/ * Sets * /
set courses:=1..n;
set timepoints:=1..t;
#!/ * parametry */

param occupy{timepoints,courses}>=0;

#!/ * Decision variables * /

#!/ * variable * /
var choose{courses} >=0 binary;

#!/ * Objective function * /

maximize Value: sum{j in courses} choose[j];

#!/ * Constraints * /
s.t. ResourceConstraints{i in timepoints}: sum{j in courses} occupy[i,j] * choose[j] <=
m;
solve;

display{j in courses: choose[j]=1} choose[j];
```

schedule.dat:

```
data;
param n:= 10;# / * the number of course * /
param t:= 20;# / * the number of time point * /
param m:= 2;# / * the maximum number of choosed course * /
param occupy: 1 2 3 4 5 6 7 8 9 10:=
1 0 1 0 0 0 0 0 0 0
2 0 1 0 0 0 0 0 0 0 1
3 0 1 0 0 0 0 1 0 0 1
4 0 1 0 0 1 0 1 0 0 1
5 0 0 0 0 1 0 1 0 0 1
6 0 0 0 1 1 0 1 0 0 1
7 0 0 0 1 1 0 1 1 0 1
8 0 0 0 1 1 1 1 1 0 1
9 0 0 0 1 1 1 1 1 1 1
10 0 0 0 1 1 1 1 1 0 1
11 0 0 0 1 1 1 0 1 0 1
```

```

12 1 0 0 1 1 1 0 1 0 1
13 1 0 0 1 0 1 0 1 0 1
14 1 0 1 1 0 1 0 1 0 1
15 1 0 1 1 0 0 0 1 0 1
16 1 0 0 1 0 0 0 1 0 1
17 1 0 0 0 0 0 0 1 0 1
18 0 0 0 0 0 0 0 1 0 1
19 0 0 0 0 0 0 0 0 0 1
20 0 0 0 0 0 0 0 0 0 0;
end;

```

附录 B:

gas.mod:

```

param n>0 integer;
param r>=0;
set D:=1..n;
set D1:=2..n;
param distance{D} >=0;

var m>=0;
var station{D}>=0;

minimize Value: m;

s.t. stationConstraints{j in D1}:station[j]-station[j-1] <= m;
s.t. distance1Constraints{i in D}:distance[i]-station[i] <= r;
s.t. distance2Constraints{i in D}:station[i]-distance[i] <= r;

solve;

display:m;
display{j in D}: station[j];

```

gas.dat:

```

data;
param n:=10;
param r:=5.0;

param distance:= [1] 10.0 [2] 25.89 [3] 39.48 [4] 58.42 [5] 69.72 [6] 82.82 [7] 99.6 [8]
116.77 [9] 128.52 [10] 147.85;end;

```