```
"E:\1 □□□□\3 □□□□□\1 □□□□□□\1 □□□□□□□□\1_□□□□□□_□□□□\1_LW _□□□□\4 □□□□\3 python_code\1 exzample\2 □□□□□□\9 Code for this paper\Scripts\python.exe" "D:\Python\Pycharm\setroute\PyCharm Community Edition 2021.2.3\plugins\python-ce\helpers\pydev\pydevconsole.py" --mode=client --port=53204

import sys; print('Python %s on %s' % (sys.version, sys.platform))
sys.path.extend(['E:\\1 □□□□\\3 □□□□□□\\1 □□□□□□□\\1 □□□□□□□□□\\1_□□□□□□_□□□□\\1_LW _□□□□\\4 □□□□\\3 python_code\\9 Code for this paper', 'E:/1 □□□□/3 □□□□□/1 □□□□□□□/1 □□□□□□□□□/1_□□□□□□_□□□□/1_LW _□□□□/4 □□□□/3 python_code/9 Code for this paper'])

PyDev console: starting.

Python 3.9.7 (tags/v3.9.7:1016ef3, Aug 30 2021, 20:19:38) [MSC v.1929 64 bit (AMD64)] on win32
>>> runfile('E:/1 □□□□/3 □□□□□/1 □□□□□□□/1 □□□□□□□□□/1_□□□□□□_□□□□/1_LW _□□□□/4 □□□□/3 python_code/9 Code for this paper/main_ECCG_deterministic.py', wdir='E:/1 □□□□/3 □□□□□/1 □□□□□□□/1 □□□□□□□□□/1_□□□□□□_□□□□/1_LW _□□□□/4 □□□□/3 python_code/9 Code for this paper')
Backend TkAgg is interactive backend. Turning interactive mode on.
Waiting 5s.....

Optimize the  ./R_7_1.xlsx  instance by ECCG for deterministic model

Set parameter MIPGap to value 0.01
      Master protblem status =  2 , is Optimal and MP obj =  240.0
The initial lb =  -inf       ub =  inf

The current iteration cnt =  0
      The SP model was solved Optimal 2 and SPObj =  240.0
      Deterministic Sub problem Status=  2 , is Optimal
      Master protblem status =  2 , is Optimal
      lb =  380.0                  ub =  380.0
       MPObj =  380.0     MP_delete_Hua_Obj =  240.0       Hua =  140.0       SPObj =  240.0       Deter_SP_Obj =  140.0

ub - lb =  0.0

Iteration cycle stopped by termination criterion 1: Because ub - lb <= eps, the iteration stop, and cnt =  0
    i:  0.0  l_i:  7.0   p_i:  7.0   aI_i:  5.0       sol_a_i:  5.0   sol_g_i:  0.0   d_i:  31.0   sol_taoi:  5.0   sol_deltai:  29.0   sol_deltai - sol_taoi:  24.0   sol_taoP:  5.0   sol_deltaP:  11.0   sol_deltaP - sol_taoP:  6.0   cI_i:  6150034.0   sol_c_i:  6150034.0   sol_gp_i:  0.0  total work:  6327456.0   wasted work:  0.6729605073508216
    i:  1.0  l_i:  6.0   p_i:  27.0   aI_i:  13.0       sol_a_i:  13.0  sol_g_i:  0.0   d_i:  21.0   sol_taoi:  13.0   sol_deltai:  19.0   sol_deltai - sol_taoi:  6.0   sol_taoP:  13.0   sol_deltaP:  15.0   sol_deltaP - sol_taoP:  2.0   cI_i:  1431098.0   sol_c_i:  1431098.0   sol_gp_i:  0.0  total work:  1845508.0   wasted work:  1.5718544704222361
    i:  2.0  l_i:  7.0   p_i:  0.0   aI_i:  18.0       sol_a_i:  18.0  sol_g_i:  0.0   d_i:  45.0   sol_taoi:  18.0   sol_deltai:  43.0   sol_deltai - sol_taoi:  25.0   sol_taoP:  18.0   sol_deltaP:  25.0   sol_deltaP - sol_taoP:  7.0   cI_i:  6471276.0   sol_c_i:  6471276.0   sol_gp_i:  0.0  total work:  7118388.0   wasted work:  2.4544916630001063
    i:  3.0  l_i:  7.0   p_i:  27.0   aI_i:  21.0       sol_a_i:  21.0  sol_g_i:  0.0   d_i:  37.0   sol_taoi:  21.0   sol_deltai:  35.0   sol_deltai - sol_taoi:  14.0   sol_taoP:  21.0   sol_deltaP:  24.0   sol_deltaP - sol_taoP:  3.0   cI_i:  3658013.0   sol_c_i:  3658013.0   sol_gp_i:  0.0  total work:  3954660.0   wasted work:  1.1251801671951571
    i:  4.0  l_i:  7.0   p_i:  14.0   aI_i:  4.0       sol_a_i:  4.0   sol_g_i:  0.0   d_i:  54.0   sol_taoi:  4.0   sol_deltai:  36.0   sol_deltai - sol_taoi:  32.0   sol_taoP:  4.0   sol_deltaP:  10.0   sol_deltaP - sol_taoP:  6.0   cI_i:  8295964.0   sol_c_i:  8295964.0   sol_gp_i:  0.0  total work:  8304786.0   wasted work:  0.03346178938265237
    i:  5.0  l_i:  6.0   p_i:  21.0   aI_i:  19.0       sol_a_i:  19.0  sol_g_i:  0.0   d_i:  48.0   sol_taoi:  19.0   sol_deltai:  28.0   sol_deltai - sol_taoi:  9.0   sol_taoP:  19.0   sol_deltaP:  21.0   sol_deltaP - sol_taoP:  2.0   cI_i:  2220586.0   sol_c_i:  2220586.0   sol_gp_i:  0.0  total work:  2636440.0   wasted work:  1.577331553155012
    i:  6.0  l_i:  7.0   p_i:  7.0   aI_i:  28.0       sol_a_i:  28.0  sol_g_i:  0.0   d_i:  71.0   sol_taoi:  30.0   sol_deltai:  50.0   sol_deltai - sol_taoi:  20.0   sol_taoP:  30.0   sol_deltaP:  34.0   sol_deltaP - sol_taoP:  4.0   cI_i:  5118839.0   sol_c_i:  5118839.0   sol_gp_i:  0.0  total work:  5141058.0   wasted work:  0.08427652440412071
Time: 43.000000
```