```
"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=9291

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_9_1.xlsx  instance by ECCG for deterministic model

Set parameter MIPGap to value 0.01
      Master protblem status =  2 , is Optimal and MP obj =  402.0
The initial lb =  -inf       ub =  inf

The current iteration cnt =  0
      The SP model was solved Optimal 2 and SPObj =  402.0
      Deterministic Sub problem Status=  2 , is Optimal
      Master protblem status =  2 , is Optimal
      lb =  660.0                  ub =  660.0
       MPObj =  660.0     MP_delete_Hua_Obj =  402.0       Hua =  258.0       SPObj =  402.0       MP_SP_Obj =  258.0         Deter_SP_Obj =  258.0

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:  6.0   p_i:  0.0  aI_i:  20.0       sol_a_i:  20.0  sol_g_i:  0.0   d_i:  45.0    sol_taoi:  20.0    sol_deltai:  45.0  sol_deltai - sol_taoi:  25.0  sol_taoP:  20.0     sol_deltaP:  29.0     sol_deltaP - sol_taoP:  9.0  cl_i:  6480487.0     sol_c_i:  6480487.0    sol_gp_i:  0.0  total work:  6591100.0    wasted work:  0.4195543991139567
    i:  1.0  l_i:  5.0   p_i:  0.0  aI_i:  4.0        sol_a_i:  4.0   sol_g_i:  0.0   d_i:  12.0    sol_taoi:  4.0   sol_deltai:  12.0  sol_deltai - sol_taoi:  8.0    sol_taoP:  4.0    sol_deltaP:  8.0    sol_deltaP - sol_taoP:  4.0   cl_i:  2048798.0     sol_c_i:  2048798.0    sol_gp_i:  0.0  total work:  2109152.0    wasted work:  0.22892233466340975
    i:  2.0  l_i:  7.0   p_i:  20.0    aI_i:  20.0       sol_a_i:  20.0  sol_g_i:  0.0   d_i:  50.0    sol_taoi:  20.0    sol_deltai:  50.0  sol_deltai - sol_taoi:  30.0  sol_taoP:  20.0  sol_deltaP:  28.0     sol_deltaP - sol_taoP:  8.0   cl_i:  7761436.0     sol_c_i:  7761436.0    sol_gp_i:  0.0  total work:  8041142.0    wasted work:  1.0609230629181776
    i:  3.0  l_i:  7.0   p_i:  13.0    aI_i:  29.0       sol_a_i:  29.0  sol_g_i:  0.0   d_i:  61.0    sol_taoi:  29.0    sol_deltai:  61.0  sol_deltai - sol_taoi:  32.0  sol_taoP:  29.0  sol_deltaP:  35.0     sol_deltaP - sol_taoP:  6.0   cl_i:  8409158.0     sol_c_i:  8409158.0    sol_gp_i:  0.0  total work:  8568430.0    wasted work:  0.6041176738328958
    i:  4.0  l_i:  6.0   p_i:  0.0  aI_i:  73.0       sol_a_i:  73.0  sol_g_i:  0.0   d_i:  82.0    sol_taoi:  73.0    sol_deltai:  82.0  sol_deltai - sol_taoi:  9.0    sol_taoP:  73.0     sol_deltaP:  76.0     sol_deltaP - sol_taoP:  3.0   cl_i:  2118580.0     sol_c_i:  2118580.0    sol_gp_i:  0.0  total work:  2372796.0    wasted work:  0.9642396565065012
    i:  5.0  l_i:  7.0   p_i:  6.0   aI_i:  18.0       sol_a_i:  18.0  sol_g_i:  0.0   d_i:  58.0    sol_taoi:  18.0    sol_deltai:  47.0  sol_deltai - sol_taoi:  29.0  sol_taoP:  18.0     sol_deltaP:  24.0     sol_deltaP - sol_taoP:  6.0   cl_i:  7457742.0     sol_c_i:  7457742.0    sol_gp_i:  0.0  total work:  7777498.0    wasted work:  1.2128324558874846
    i:  6.0  l_i:  7.0   p_i:  27.0    aI_i:  1.0        sol_a_i:  1.0   sol_g_i:  0.0   d_i:  41.0    sol_taoi:  1.0   sol_deltai:  29.0  sol_deltai - sol_taoi:  28.0  sol_taoP:  1.0     sol_deltaP:  7.0   sol_deltaP - sol_taoP:  6.0   cl_i:  7269633.0     sol_c_i:  7269633.0    sol_gp_i:  0.0  total work:  7909320.0    wasted work:  2.4263286856551864
    i:  7.0  l_i:  7.0   p_i:  27.0    aI_i:  39.0       sol_a_i:  39.0  sol_g_i:  0.0   d_i:  75.0    sol_taoi:  39.0    sol_deltai:  61.0  sol_deltai - sol_taoi:  22.0  sol_taoP:  39.0  sol_deltaP:  44.0     sol_deltaP - sol_taoP:  5.0   cl_i:  5588920.0     sol_c_i:  5588920.0    sol_gp_i:  0.0  total work:  5800168.0    wasted work:  0.8012623082641744
    i:  8.0  l_i:  6.0   p_i:  5.0   aI_i:  2.0        sol_a_i:  2.0   sol_g_i:  0.0   d_i:  29.0    sol_taoi:  2.0   sol_deltai:  15.0  sol_deltai - sol_taoi:  13.0  sol_taoP:  2.0    sol_deltaP:  7.0   sol_deltaP - sol_taoP:  5.0   cl_i:  3338904.0     sol_c_i:  3338904.0    sol_gp_i:  0.0  total work:  3427372.0    wasted work:  0.33555855623492287
Time: 77.000000
```