```
"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=31785

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_RO_CCG.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 CCG

      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
      Master protblem status =  2 , is Optimal
      Deterministic Sub problem Status=  2 , is Optimal
      lb =  692.0                  ub =  692.0
       MPObj =  692.0     MP_delete_Hua_Obj =  421.0       Hua =  271.0       SPObj =  402.0       Deter_SP_Obj =  271.0

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:  28.0    al_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:  25.0    sol_deltaP - sol_taoP:  5.0  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:  28.0    al_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:  6.0   sol_deltaP - sol_taoP:  2.0  cl_i:  2048798.0    sol_c_i:  2048798.0    sol_gp_i:  0.0  total work:  2240974.0    wasted work:  0.7289223346634097
    i:  2.0  l_i:  7.0   p_i:  -0.0    al_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:  7909320.0    wasted work:  0.5609230629181775
    i:  3.0  l_i:  7.0   p_i:  14.0    al_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:  8700252.0    wasted work:  1.104117673832896
    i:  4.0  l_i:  6.0   p_i:  8.0   al_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:  75.0    sol_deltaP - sol_taoP:  2.0  cl_i:  2118580.0    sol_c_i:  2118580.0    sol_gp_i:  0.0  total work:  2636440.0    wasted work:  1.9642396565065012
    i:  5.0  l_i:  7.0   p_i:  21.0    al_i:  18.0      sol_a_i:  20.0  sol_g_i:  0.4   d_i:  58.0    sol_taoi:  20.0    sol_deltai:  49.0  sol_deltai - sol_taoi:  29.0  sol_taoP:  20.0  sol_deltaP:  30.0    sol_deltaP - sol_taoP:  10.0    cl_i:  7457742.0    sol_c_i:  7457742.0    sol_gp_i:  0.0  total work:  7513854.0    wasted work:  0.21283245588748465
    i:  6.0  l_i:  7.0   p_i:  7.0   al_i:  1.0       sol_a_i:  3.0   sol_g_i:  0.25  d_i:  41.0    sol_taoi:  3.0   sol_deltai:  31.0  sol_deltai - sol_taoi:  28.0  sol_taoP:  3.0    sol_deltaP:  9.0   sol_deltaP - sol_taoP:  6.0  cl_i:  7269633.0    sol_c_i:  7270745.0    sol_gp_i:  0.4  total work:  7513854.0    wasted work:  0.9221108767883964
    i:  7.0  l_i:  7.0   p_i:  7.0   al_i:  39.0      sol_a_i:  48.0  sol_g_i:  0.9   d_i:  75.0    sol_taoi:  48.0    sol_deltai:  70.0  sol_deltai - sol_taoi:  22.0  sol_taoP:  48.0    sol_deltaP:  52.0    sol_deltaP - sol_taoP:  4.0  cl_i:  5588920.0    sol_c_i:  5654529.0    sol_gp_i:  1.0  total work:  6063812.0    wasted work:  1.5524077923260153
    i:  8.0  l_i:  6.0   p_i:  14.0    al_i:  2.0       sol_a_i:  7.95  sol_g_i:  0.85  d_i:  29.0    sol_taoi:  8.0   sol_deltai:  21.0  sol_deltai - sol_taoi:  13.0  sol_taoP:  8.0    sol_deltaP:  11.0    sol_deltaP - sol_taoP:  3.0  cl_i:  3338904.0    sol_c_i:  3369880.0    sol_gp_i:  1.0  total work:  3559194.0    wasted work:  0.7180667870309964
Time: 177.000000
```