```
D:\Python\Python\setroute\python.exe "D:\Python\Pycharm\setroute\PyCharm Community Edition 2021.2.3\plugins\python-ce\helpers\pydev\pydevconsole.py" --mode=client --port=21375

import sys; print('Python %s on %s' % (sys.version, sys.platform))
sys.path.extend(['E:\\1 □□□□\\3 □□□□□\\1 □□□□□□□\\1 □□□□□□□□□\\1_□□□□□□_□□□□\\1_LW _□□□□1\\4 □□□□\\3 python_code\\9 Code for this paper', 'E:/1 □□□□/3 □□□□□/1 □□□□□□/1 □□□□□□□□/1_□□□□□□_□□□□/1_LW _□□□□1/4 □□□□/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 _□□□□1/4 □□□□/3 python_code/9 Code for this paper/main_RO_CCG.py', wdir='E:/1 □□□□/3 □□□□□/1 □□□□□□/1 □□□□□□□□/1_□□□□□□□_□□□□/1_LW _□□□□1/4 □□□□/3 python_code/9 Code for this paper')
Backend TkAgg is interactive backend. Turning interactive mode on.
Waiting 5s.....

Optimize the  ./R_16_2.xlsx  instance by CCG

        Master protblem status =  2 , is Optimal and MP obj =  815.0
The initial lb =  -inf        ub =  inf

The current iteration cnt =  0
        The SP model was solved Optimal 2 and SPObj =  808.0
        Deterministic Sub problem Status=  2 , is Optimal
        lb =  1499.0                    ub =  1499.0
         MPObj =  1499.0        MP_delete_Hua_Obj =  844.0        Hua =  655.0        SPObj =  808.0        Deter_SP_Obj =  655.0

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:  4.0  p_i:  14.0  al_i:  10.0  sol_a_i:  10.0  sol_g_i:  0.0  d_i:  18.0  sol_taoi:  10.0  sol_deltai:  18.0  sol_deltai - sol_taoi:  8.0  sol_taoP:  10.0  sol_deltaP:  12.0  sol_deltaP - sol_taoP:  2.0  cl_i:  2014909.0  sol_c_i:  2014909.0  sol_gp_i:  0.0  total work:  2636440.0  wasted work:  2.3574630941724446
     i:  1.0  l_i:  7.0  p_i:  -0.0  al_i:  27.0  sol_a_i:  27.0  sol_g_i:  0.0  d_i:  35.0  sol_taoi:  27.0  sol_deltai:  35.0  sol_deltai - sol_taoi:  8.0  sol_taoP:  27.0  sol_deltaP:  29.0  sol_deltaP - sol_taoP:  2.0  cl_i:  2052562.0  sol_c_i:  2052562.0  sol_gp_i:  0.0  total work:  2109152.0  wasted work:  0.21464550681980246
     i:  2.0  l_i:  4.0  p_i:  12.0  al_i:  62.0  sol_a_i:  62.0  sol_g_i:  0.0  d_i:  83.0  sol_taoi:  62.0  sol_deltai:  85.0  sol_deltai - sol_taoi:  23.0  sol_taoP:  62.0  sol_deltaP:  67.0  sol_deltaP - sol_taoP:  5.0  cl_i:  5915693.0  sol_c_i:  5915693.0  sol_gp_i:  0.0  total work:  5931990.0  wasted work:  0.061814416410007435
     i:  3.0  l_i:  5.0  p_i:  8.0  al_i:  36.0  sol_a_i:  36.0  sol_g_i:  0.0  d_i:  51.0  sol_taoi:  36.0  sol_deltai:  51.0  sol_deltai - sol_taoi:  15.0  sol_taoP:  36.0  sol_deltaP:  40.0  sol_deltaP - sol_taoP:  4.0  cl_i:  3872396.0  sol_c_i:  3872396.0  sol_gp_i:  0.0  total work:  3954660.0  wasted work:  0.3120268240506137
     i:  4.0  l_i:  5.0  p_i:  29.0  al_i:  34.0  sol_a_i:  34.0  sol_g_i:  0.0  d_i:  61.0  sol_taoi:  34.0  sol_deltai:  61.0  sol_deltai - sol_taoi:  27.0  sol_taoP:  34.0  sol_deltaP:  40.0  sol_deltaP - sol_taoP:  6.0  cl_i:  6930279.0  sol_c_i:  6930279.0  sol_gp_i:  0.0  total work:  7118388.0  wasted work:  0.7134962297643792
     i:  5.0  l_i:  7.0  p_i:  25.0  al_i:  65.0  sol_a_i:  65.0  sol_g_i:  0.0  d_i:  83.0  sol_taoi:  65.0  sol_deltai:  90.0  sol_deltai - sol_taoi:  25.0  sol_taoP:  65.0  sol_deltaP:  74.0  sol_deltaP - sol_taoP:  9.0  cl_i:  6424783.0  sol_c_i:  6424783.0  sol_gp_i:  0.0  total work:  6459278.0  wasted work:  0.13083931361988135
     i:  6.0  l_i:  5.0  p_i:  13.0  al_i:  34.0  sol_a_i:  34.0  sol_g_i:  0.0  d_i:  60.0  sol_taoi:  34.0  sol_deltai:  60.0  sol_deltai - sol_taoi:  26.0  sol_taoP:  34.0  sol_deltaP:  44.0  sol_deltaP - sol_taoP:  10.0  cl_i:  6807860.0  sol_c_i:  6807860.0  sol_gp_i:  0.0  total work:  6986566.0  wasted work:  0.6778307111104368
     i:  7.0  l_i:  7.0  p_i:  7.0  al_i:  14.0  sol_a_i:  14.0  sol_g_i:  0.0  d_i:  31.0  sol_taoi:  14.0  sol_deltai:  31.0  sol_deltai - sol_taoi:  17.0  sol_taoP:  14.0  sol_deltaP:  17.0  sol_deltaP - sol_taoP:  3.0  cl_i:  4249947.0  sol_c_i:  4249947.0  sol_gp_i:  0.0  total work:  4745592.0  wasted work:  1.8799783040767095
     i:  8.0  l_i:  5.0  p_i:  20.0  al_i:  58.0  sol_a_i:  58.0  sol_g_i:  0.0  d_i:  67.0  sol_taoi:  58.0  sol_deltai:  67.0  sol_deltai - sol_taoi:  9.0  sol_taoP:  58.0  sol_deltaP:  60.0  sol_deltaP - sol_taoP:  2.0  cl_i:  2110020.0  sol_c_i:  2110020.0  sol_gp_i:  0.0  total work:  2240974.0  wasted work:  0.4967076815706028
     i:  9.0  l_i:  5.0  p_i:  18.0  al_i:  1.0  sol_a_i:  5.0  sol_g_i:  0.8  d_i:  16.0  sol_taoi:  5.0  sol_deltai:  16.0  sol_deltai - sol_taoi:  11.0  sol_taoP:  5.0  sol_deltaP:  10.0  sol_deltaP - sol_taoP:  5.0  cl_i:  2824634.0  sol_c_i:  3933451.657142857  sol_gp_i:  0.7009563762389543  total work:  4086482.0  wasted work:  0.5804431083474038
     i:  10.0  l_i:  6.0  p_i:  18.0  al_i:  20.0  sol_a_i:  23.2  sol_g_i:  0.4  d_i:  34.0  sol_taoi:  24.0  sol_deltai:  38.0  sol_deltai - sol_taoi:  14.0  sol_taoP:  24.0  sol_deltaP:  26.0  sol_deltaP - sol_taoP:  2.0  cl_i:  3447441.0  sol_c_i:  3559194.0  sol_gp_i:  0.1059696029494317  total work:  3691016.0  wasted work:  0.5
     i:  11.0  l_i:  5.0  p_i:  29.0  al_i:  12.0  sol_a_i:  13.0  sol_g_i:  0.1  d_i:  27.0  sol_taoi:  13.0  sol_deltai:  21.0  sol_deltai - sol_taoi:  8.0  sol_taoP:  13.0  sol_deltaP:  16.0  sol_deltaP - sol_taoP:  3.0  cl_i:  2020295.0  sol_c_i:  2636440.0  sol_gp_i:  0.584258507684605  total work:  2768262.0  wasted work:  0.5
     i:  12.0  l_i:  6.0  p_i:  6.0  al_i:  56.0  sol_a_i:  58.0  sol_g_i:  0.2857142857142857  d_i:  66.0  sol_taoi:  58.0  sol_deltai:  67.0  sol_deltai - sol_taoi:  9.0  sol_taoP:  58.0  sol_deltaP:  60.0  sol_deltaP - sol_taoP:  2.0  cl_i:  2268481.0  sol_c_i:  2504618.0  sol_gp_i:  0.12795230364755938  total work:  2504618.0  wasted work:  0.0
     i:  13.0  l_i:  5.0  p_i:  -0.0  al_i:  56.0  sol_a_i:  62.4  sol_g_i:  0.9142857142857143  d_i:  83.0  sol_taoi:  63.0  sol_deltai:  87.0  sol_deltai - sol_taoi:  24.0  sol_taoP:  63.0  sol_deltaP:  71.0  sol_deltaP - sol_taoP:  8.0  cl_i:  6064221.0  sol_c_i:  6591100.0  sol_gp_i:  0.9992243328124282  total work:  6591100.0  wasted work:  0.0
     i:  14.0  l_i:  5.0  p_i:  24.0  al_i:  13.0  sol_a_i:  18.0  sol_g_i:  0.8333333333333334  d_i:  39.0  sol_taoi:  18.0  sol_deltai:  43.0  sol_deltai - sol_taoi:  25.0  sol_taoP:  18.0  sol_deltaP:  24.0  sol_deltaP - sol_taoP:  6.0  cl_i:  6481353.0  sol_c_i:  7513854.0  sol_gp_i:  0.7832539333343451  total work:  7909320.0  wasted work:  1.5
     i:  15.0  l_i:  4.0  p_i:  16.0  al_i:  55.0  sol_a_i:  61.0  sol_g_i:  0.6666666666666666  d_i:  74.0  sol_taoi:  61.0  sol_deltai:  74.0  sol_deltai - sol_taoi:  13.0  sol_taoP:  61.0  sol_deltaP:  65.0  sol_deltaP - sol_taoP:  4.0  cl_i:  3404414.0  sol_c_i:  4877414.0  sol_gp_i:  0.6983849433326759  total work:  4877414.0  wasted work:  0.0
Time: 1599.000000
```