```
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=35290

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_13_3.xlsx  instance by CCG

        Master protblem status =  2 , is Optimal and MP obj =  566.0
The initial lb =  -inf        ub =  inf

The current iteration cnt =  0
        The SP model was solved Optimal 2 and SPObj =  566.0
        Master protblem status =  2 , is Optimal
        Deterministic Sub problem Status=  2 , is Optimal
        lb =  1032.0                    ub =  1032.0
         MPObj =  1032.0        MP_delete_Hua_Obj =  593.0        Hua =  439.0        SPObj =  566.0        Deter_SP_Obj =  439.0

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:  5.0  p_i:  12.0  al_i:  1.0  sol_a_i:  1.0  sol_g_i:  0.0  d_i:  14.0  sol_taoi:  1.0  sol_deltai:  15.0  sol_deltai - sol_taoi:  14.0  sol_taoP:  1.0  sol_deltaP:  4.0  sol_deltaP - sol_taoP:  3.0  cl_i:  3687371.0  sol_c_i:  3687371.0  sol_gp_i:  0.0  total work:  3691016.0  wasted work:  0.01382546160731896
    i:  1.0  l_i:  6.0  p_i:  6.0  al_i:  5.0  sol_a_i:  5.0  sol_g_i:  0.0  d_i:  11.0  sol_taoi:  5.0  sol_deltai:  12.0  sol_deltai - sol_taoi:  7.0  sol_taoP:  5.0  sol_deltaP:  7.0  sol_deltaP - sol_taoP:  2.0  cl_i:  1678517.0  sol_c_i:  1678517.0  sol_gp_i:  0.0  total work:  1713686.0  wasted work:  0.13339579129432114
    i:  2.0  l_i:  5.0  p_i:  20.0  al_i:  5.0  sol_a_i:  5.0  sol_g_i:  0.0  d_i:  13.0  sol_taoi:  5.0  sol_deltai:  11.0  sol_deltai - sol_taoi:  6.0  sol_taoP:  5.0  sol_deltaP:  6.0  sol_deltaP - sol_taoP:  1.0  cl_i:  1414613.0  sol_c_i:  1414613.0  sol_gp_i:  0.0  total work:  1581864.0  wasted work:  0.6343819696257074
    i:  3.0  l_i:  5.0  p_i:  17.0  al_i:  13.0  sol_a_i:  13.0  sol_g_i:  0.0  d_i:  46.0  sol_taoi:  13.0  sol_deltai:  44.0  sol_deltai - sol_taoi:  31.0  sol_taoP:  13.0  sol_deltaP:  19.0  sol_deltaP - sol_taoP:  6.0  cl_i:  8167125.0  sol_c_i:  8167125.0  sol_gp_i:  0.0  total work:  8172964.0  wasted work:  0.022147289526786122
    i:  4.0  l_i:  5.0  p_i:  22.0  al_i:  22.0  sol_a_i:  22.0  sol_g_i:  0.0  d_i:  31.0  sol_taoi:  22.0  sol_deltai:  34.0  sol_deltai - sol_taoi:  12.0  sol_taoP:  22.0  sol_deltaP:  25.0  sol_deltaP - sol_taoP:  3.0  cl_i:  3074214.0  sol_c_i:  3074214.0  sol_gp_i:  0.0  total work:  3163728.0  wasted work:  0.3395260275219614
    i:  5.0  l_i:  6.0  p_i:  27.0  al_i:  23.0  sol_a_i:  23.0  sol_g_i:  0.0  d_i:  27.0  sol_taoi:  23.0  sol_deltai:  28.0  sol_deltai - sol_taoi:  5.0  sol_taoP:  23.0  sol_deltaP:  24.0  sol_deltaP - sol_taoP:  1.0  cl_i:  1267544.0  sol_c_i:  1267544.0  sol_gp_i:  0.0  total work:  1318220.0  wasted work:  0.19221374277434722
    i:  6.0  l_i:  5.0  p_i:  12.0  al_i:  29.0  sol_a_i:  29.0  sol_g_i:  0.0  d_i:  63.0  sol_taoi:  29.0  sol_deltai:  63.0  sol_deltai - sol_taoi:  34.0  sol_taoP:  29.0  sol_deltaP:  35.0  sol_deltaP - sol_taoP:  6.0  cl_i:  8717480.0  sol_c_i:  8717480.0  sol_gp_i:  0.0  total work:  8832074.0  wasted work:  0.4346543065649133
    i:  7.0  l_i:  7.0  p_i:  22.0  al_i:  35.0  sol_a_i:  37.0  sol_g_i:  0.4  d_i:  52.0  sol_taoi:  37.0  sol_deltai:  46.0  sol_deltai - sol_taoi:  9.0  sol_taoP:  37.0  sol_deltaP:  39.0  sol_deltaP - sol_taoP:  2.0  cl_i:  2331657.0  sol_c_i:  2372796.0  sol_gp_i:  0.02600666049673044  total work:  2636440.0  wasted work:  1.0
    i:  8.0  l_i:  5.0  p_i:  29.0  al_i:  43.0  sol_a_i:  45.0  sol_g_i:  0.25  d_i:  61.0  sol_taoi:  45.0  sol_deltai:  57.0  sol_deltai - sol_taoi:  12.0  sol_taoP:  45.0  sol_deltaP:  48.0  sol_deltaP - sol_taoP:  3.0  cl_i:  2973158.0  sol_c_i:  3954659.342857144  sol_gp_i:  0.9307070736079179  total work:  3954660.0  wasted work:  2.492538636033121e-06
    i:  9.0  l_i:  7.0  p_i:  17.0  al_i:  45.0  sol_a_i:  53.0  sol_g_i:  0.8  d_i:  82.0  sol_taoi:  53.0  sol_deltai:  79.0  sol_deltai - sol_taoi:  26.0  sol_taoP:  53.0  sol_deltaP:  58.0  sol_deltaP - sol_taoP:  5.0  cl_i:  6761039.0  sol_c_i:  6854744.0  sol_gp_i:  0.08885561590629788  total work:  6986566.0  wasted work:  0.5
    i:  10.0  l_i:  5.0  p_i:  24.0  al_i:  46.0  sol_a_i:  48.0  sol_g_i:  0.2857142857142857  d_i:  58.0  sol_taoi:  48.0  sol_deltai:  54.0  sol_deltai - sol_taoi:  6.0  sol_taoP:  48.0  sol_deltaP:  50.0  sol_deltaP - sol_taoP:  2.0  cl_i:  1433341.0  sol_c_i:  2900084.0  sol_gp_i:  0.7947638265453197  total work:  2900084.0  wasted work:  0.0
    i:  11.0  l_i:  5.0  p_i:  24.0  al_i:  49.0  sol_a_i:  56.0  sol_g_i:  1.0  d_i:  73.0  sol_taoi:  56.0  sol_deltai:  73.0  sol_deltai - sol_taoi:  17.0  sol_taoP:  56.0  sol_deltaP:  61.0  sol_deltaP - sol_taoP:  5.0  cl_i:  4290124.0  sol_c_i:  4748808.0  sol_gp_i:  0.8698927341414944  total work:  4877414.0  wasted work:  0.48780173263946836
    i:  12.0  l_i:  6.0  p_i:  6.0  al_i:  50.0  sol_a_i:  55.18571428571428  sol_g_i:  0.8642857142857143  d_i:  81.0  sol_taoi:  56.0  sol_deltai:  77.0  sol_deltai - sol_taoi:  21.0  sol_taoP:  56.0  sol_deltaP:  63.0  sol_deltaP - sol_taoP:  7.0  cl_i:  5286360.0  sol_c_i:  6459278.0  sol_gp_i:  0.8897740893022412  total work:  6459278.0  wasted work:  0.0
Time: 155.000000
```