```
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=37562

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_BDC.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_10_3.xlsx  instance by BDC

        Master protblem status =  2 , is Optimal
        sol_MP_obj =  583.0
The initial lb =  -inf        ub =  inf

The current iteration cnt =  0
        Dual problem status =  2 , is Optimal
        Add optimal cut
        Master protblem status =  2 , is Optimal
        Deterministic Sub problem Status=  2 , is Optimal
        lb =  614.780600541826                  ub =  614.780600541826
        MPObj =  614.780600541826       MPObj_Remove_Hua =  608.0       DualSPObj =  6.780600541825923       Hua =  6.780600541825924       Deterministic_SP_SPObj =  467.0

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:  7.0  aI_i:  48.0       sol_a_i:  48.0  sol_g_i:  0.0    d_i:  67.0    sol_taoi:  48.0    sol_deltai:  67.0  sol_deltai - sol_taoi:  19.0   sol_taoP:  48.0    sol_deltaP:  56.0    sol_deltaP - sol_taoP:  8.0  cl_i:  4999375.0    sol_c_i:  4999375.0    sol_gp_i:  0.0  total work:  5141058.0    wasted work:  0.5374027097146151
    i:  1.0  l_i:  4.0   p_i:  7.0  aI_i:  17.0       sol_a_i:  17.0  sol_g_i:  0.0    d_i:  29.0    sol_taoi:  17.0    sol_deltai:  29.0  sol_deltai - sol_taoi:  12.0   sol_taoP:  17.0    sol_deltaP:  20.0    sol_deltaP - sol_taoP:  3.0  cl_i:  2974108.0    sol_c_i:  2974108.0    sol_gp_i:  0.0  total work:  3163728.0    wasted work:  0.7192274430671663
    i:  2.0  l_i:  7.0   p_i:  16.0    aI_i:  43.0       sol_a_i:  43.0  sol_g_i:  0.0    d_i:  62.0    sol_taoi:  43.0    sol_deltai:  62.0  sol_deltai - sol_taoi:  19.0   sol_taoP:  43.0  sol_deltaP:  46.0    sol_deltaP - sol_taoP:  3.0  cl_i:  4775116.0    sol_c_i:  4775116.0    sol_gp_i:  0.0  total work:  4877414.0    wasted work:  0.38801565747750755
    i:  3.0  l_i:  5.0   p_i:  11.0    aI_i:  5.0        sol_a_i:  5.0   sol_g_i:  0.0    d_i:  31.0    sol_taoi:  5.0   sol_deltai:  31.0  sol_deltai - sol_taoi:  26.0   sol_taoP:  5.0    sol_deltaP:  13.0    sol_deltaP - sol_taoP:  8.0  cl_i:  6615975.0    sol_c_i:  6615975.0    sol_gp_i:  0.0  total work:  6854744.0    wasted work:  0.9056492846414104
    i:  4.0  l_i:  7.0   p_i:  0.0   aI_i:  29.0       sol_a_i:  29.0  sol_g_i:  0.0    d_i:  47.0    sol_taoi:  29.0    sol_deltai:  47.0  sol_deltai - sol_taoi:  18.0   sol_taoP:  29.0    sol_deltaP:  38.0    sol_deltaP - sol_taoP:  9.0  cl_i:  4538343.0    sol_c_i:  4538343.0    sol_gp_i:  0.0  total work:  4745592.0    wasted work:  0.7860941269287373
    i:  5.0  l_i:  7.0   p_i:  0.0   aI_i:  61.0       sol_a_i:  62.0  sol_g_i:  0.2    d_i:  83.0    sol_taoi:  62.0    sol_deltai:  83.0  sol_deltai - sol_taoi:  21.0   sol_taoP:  62.0    sol_deltaP:  69.0    sol_deltaP - sol_taoP:  7.0  cl_i:  5372244.0    sol_c_i:  6637735.2    sol_gp_i:  0.8  total work:  6854744.0    wasted work:  0.8231129856928275
    i:  6.0  l_i:  5.0   p_i:  16.0    aI_i:  5.0        sol_a_i:  13.0  sol_g_i:  1.0    d_i:  31.0    sol_taoi:  13.0    sol_deltai:  35.0  sol_deltai - sol_taoi:  22.0   sol_taoP:  13.0  sol_deltaP:  18.0    sol_deltaP - sol_taoP:  5.0  cl_i:  5722539.0    sol_c_i:  5722539.0    sol_gp_i:  0.0  total work:  5800168.0    wasted work:  0.29444629879686246
    i:  7.0  l_i:  6.0   p_i:  16.0    aI_i:  61.0       sol_a_i:  67.0  sol_g_i:  0.6    d_i:  83.0    sol_taoi:  67.0    sol_deltai:  93.0  sol_deltai - sol_taoi:  26.0   sol_taoP:  67.0  sol_deltaP:  74.0    sol_deltaP - sol_taoP:  7.0  cl_i:  6601917.0    sol_c_i:  7234662.6    sol_gp_i:  0.6  total work:  7250210.0    wasted work:  0.0589711884207506
    i:  8.0  l_i:  7.0   p_i:  22.0    aI_i:  65.0       sol_a_i:  69.2  sol_g_i:  0.6    d_i:  83.0    sol_taoi:  70.0    sol_deltai:  82.0  sol_deltai - sol_taoi:  12.0   sol_taoP:  70.0  sol_deltaP:  74.0    sol_deltaP - sol_taoP:  4.0  cl_i:  2902377.0    sol_c_i:  4747885.0    sol_gp_i:  1.0  total work:  4877414.0    wasted work:  0.4913026657158896
    i:  9.0  l_i:  4.0   p_i:  12.0    aI_i:  47.0       sol_a_i:  51.2  sol_g_i:  0.6    d_i:  79.0    sol_taoi:  52.0    sol_deltai:  79.0  sol_deltai - sol_taoi:  27.0   sol_taoP:  52.0  sol_deltaP:  59.0    sol_deltaP - sol_taoP:  7.0  cl_i:  6926380.0    sol_c_i:  7242752.8    sol_gp_i:  0.6  total work:  7250210.0    wasted work:  0.02828511174159164

Optimal objective =  1075.0

Time: 346.000000
```