```
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=38532

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_11_4.xlsx  instance by BDC

        Master protblem status =  2 , is Optimal
        sol_MP_obj =  442.0
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 =  467.2649940259443                 ub =  467.2649940259443
        MPObj =  467.2649940259443      MPObj_Remove_Hua =  462.0       DualSPObj =  5.26499402594429       Hua =  5.264994025944289
Deterministic_SP_SPObj =  340.0

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:  11.0    aI_i:  1.0        sol_a_i:  1.0    sol_g_i:  0.0    d_i:  18.0    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   cI_i:  3484006.0     sol_c_i:  3484006.0     sol_gp_i:  0.0  total work:  3691016.0    wasted work:  0.7851876014625784
    i:  1.0  l_i:  5.0   p_i:  6.0   aI_i:  3.0        sol_a_i:  3.0    sol_g_i:  0.0    d_i:  39.0    sol_taoi:  3.0    sol_deltai:  35.0   sol_deltai - sol_taoi:  32.0   sol_taoP:  3.0     sol_deltaP:  11.0     sol_deltaP - sol_taoP:  8.0   cI_i:  8397469.0     sol_c_i:  8397469.0     sol_gp_i:  0.0  total work:  8436608.0    wasted work:  0.1484539758158729
    i:  2.0  l_i:  6.0   p_i:  0.0   aI_i:  13.0       sol_a_i:  13.0   sol_g_i:  0.0    d_i:  45.0    sol_taoi:  13.0     sol_deltai:  47.0   sol_deltai - sol_taoi:  34.0   sol_taoP:  13.0     sol_deltaP:  22.0     sol_deltaP - sol_taoP:  9.0   cI_i:  8838503.0     sol_c_i:  8838503.0     sol_gp_i:  0.0  total work:  9491184.0    wasted work:  2.4756148442596837
    i:  3.0  l_i:  5.0   p_i:  11.0    aI_i:  24.0       sol_a_i:  24.0   sol_g_i:  0.0    d_i:  33.0    sol_taoi:  24.0     sol_deltai:  29.0   sol_deltai - sol_taoi:  5.0    sol_taoP:  24.0     sol_deltaP:  25.0     sol_deltaP - sol_taoP:  1.0   cI_i:  1243727.0     sol_c_i:  1243727.0     sol_gp_i:  0.0  total work:  1581864.0    wasted work:  1.282551470922911
    i:  4.0  l_i:  5.0   p_i:  28.0    aI_i:  26.0       sol_a_i:  26.0   sol_g_i:  0.0    d_i:  30.0    sol_taoi:  26.0     sol_deltai:  33.0   sol_deltai - sol_taoi:  7.0    sol_taoP:  26.0     sol_deltaP:  28.0     sol_deltaP - sol_taoP:  2.0   cI_i:  1803254.0     sol_c_i:  1803254.0     sol_gp_i:  0.0  total work:  1845508.0    wasted work:  0.1602691508245968
    i:  5.0  l_i:  7.0   p_i:  16.0    aI_i:  28.0       sol_a_i:  28.0   sol_g_i:  0.0    d_i:  35.0    sol_taoi:  28.0     sol_deltai:  37.0   sol_deltai - sol_taoi:  9.0    sol_taoP:  28.0     sol_deltaP:  30.0     sol_deltaP - sol_taoP:  2.0   cI_i:  2194062.0     sol_c_i:  2194062.0     sol_gp_i:  0.0  total work:  3163728.0    wasted work:  3.67793691493074
    i:  6.0  l_i:  5.0   p_i:  23.0    aI_i:  29.0       sol_a_i:  33.0   sol_g_i:  0.8    d_i:  45.0    sol_taoi:  33.0     sol_deltai:  46.0   sol_deltai - sol_taoi:  13.0   sol_taoP:  33.0     sol_deltaP:  36.0     sol_deltaP - sol_taoP:  3.0   cI_i:  3426326.0     sol_c_i:  4691817.2     sol_gp_i:  0.8  total work:  4745592.0    wasted work:  0.20396747128703788
    i:  7.0  l_i:  5.0   p_i:  6.0   aI_i:  33.0       sol_a_i:  36.2   sol_g_i:  0.4    d_i:  44.0    sol_taoi:  37.0     sol_deltai:  45.0   sol_deltai - sol_taoi:  8.0    sol_taoP:  37.0     sol_deltaP:  40.0     sol_deltaP - sol_taoP:  3.0   cI_i:  2057589.0     sol_c_i:  2479182.5371208107    sol_gp_i:  0.3997753951548404    total work:  2636440.0    wasted work:  0.5964765474624467
    i:  8.0  l_i:  5.0   p_i:  16.0    aI_i:  42.0       sol_a_i:  42.0   sol_g_i:  0.0    d_i:  61.0    sol_taoi:  42.0     sol_deltai:  58.0   sol_deltai - sol_taoi:  16.0   sol_taoP:  42.0     sol_deltaP:  45.0     sol_deltaP - sol_taoP:  3.0   cI_i:  4171846.0     sol_c_i:  4382998.062879187     sol_gp_i:  0.20022460484515747    total work:  4481948.0    wasted work:  0.3753164764637653
    i:  9.0  l_i:  5.0   p_i:  21.0    aI_i:  46.0       sol_a_i:  53.0   sol_g_i:  1.0    d_i:  54.0    sol_taoi:  53.0     sol_deltai:  58.0   sol_deltai - sol_taoi:  5.0    sol_taoP:  53.0     sol_deltaP:  56.0     sol_deltaP - sol_taoP:  3.0   cI_i:  1080677.0     sol_c_i:  2926185.0     sol_gp_i:  1.0  total work:  3031906.0    wasted work:  0.40099907450956596
    i:  10.0   l_i:  5.0   p_i:  11.0    aI_i:  33.0       sol_a_i:  38.6   sol_g_i:  0.8    d_i:  74.0    sol_taoi:  39.0     sol_deltai:  59.0   sol_deltai - sol_taoi:  20.0    sol_taoP:  39.0     sol_deltaP:  43.0     sol_deltaP - sol_taoP:  4.0   cI_i:  5219621.0     sol_c_i:  5535993.8     sol_gp_i:  0.6  total work:  5536524.0    wasted work:  0.0020110451973122325

Optimal objective =  802.0

Time: 452.000000
```