```
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=37117

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_2.xlsx  instance by BDC

        Master protblem status =  2 , is Optimal
        sol_MP_obj =  444.0
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 =  465.36921864450045                ub =  465.36921864450045
        MPObj =  465.3692186445004      MPObj_Remove_Hua =  459.0       DualSPObj =  6.3692186445004335      Hua =  6.369218644500433      Deterministic_SP_SPObj =  312.0

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:  0.0   aI_i:  5.0       sol_a_i:  5.0    sol_g_i:  0.0    d_i:  14.0    sol_taoi:  5.0   sol_deltai:  14.0  sol_deltai - sol_taoi:  9.0    sol_taoP:  5.0    sol_deltaP:  8.0   sol_deltaP - sol_taoP:  3.0   cI_i:  2139788.0     sol_c_i:  2139788.0    sol_gp_i:  0.0  total work:  2240974.0    wasted work:  0.38379784861404015
    i:  1.0  l_i:  7.0   p_i:  0.0   aI_i:  18.0       sol_a_i:  18.0   sol_g_i:  0.0    d_i:  32.0    sol_taoi:  18.0    sol_deltai:  32.0  sol_deltai - sol_taoi:  14.0   sol_taoP:  18.0    sol_deltaP:  20.0    sol_deltaP - sol_taoP:  2.0   cI_i:  3690865.0     sol_c_i:  3690865.0    sol_gp_i:  0.0  total work:  4218304.0    wasted work:  2.0005727420309203
    i:  2.0  l_i:  7.0   p_i:  6.0   aI_i:  51.0       sol_a_i:  51.0   sol_g_i:  0.0    d_i:  71.0    sol_taoi:  51.0    sol_deltai:  71.0  sol_deltai - sol_taoi:  20.0   sol_taoP:  51.0    sol_deltaP:  55.0    sol_deltaP - sol_taoP:  4.0   cI_i:  5078032.0     sol_c_i:  5078032.0    sol_gp_i:  0.0  total work:  5272880.0    wasted work:  0.7390572135151947
    i:  3.0  l_i:  6.0   p_i:  7.0   aI_i:  11.0       sol_a_i:  11.0   sol_g_i:  0.0    d_i:  32.0    sol_taoi:  11.0    sol_deltai:  32.0  sol_deltai - sol_taoi:  21.0   sol_taoP:  11.0    sol_deltaP:  14.0    sol_deltaP - sol_taoP:  3.0   cI_i:  5446369.0     sol_c_i:  5446369.0    sol_gp_i:  0.0  total work:  6327456.0    wasted work:  3.341957336408187
    i:  4.0  l_i:  6.0   p_i:  0.0   aI_i:  40.0       sol_a_i:  40.0   sol_g_i:  0.0    d_i:  60.0    sol_taoi:  40.0    sol_deltai:  60.0  sol_deltai - sol_taoi:  20.0   sol_taoP:  40.0    sol_deltaP:  43.0    sol_deltaP - sol_taoP:  3.0   cI_i:  5202834.0     sol_c_i:  5202834.0    sol_gp_i:  0.0  total work:  6327456.0    wasted work:  4.265684028462624
    i:  5.0  l_i:  4.0   p_i:  17.0    aI_i:  22.0       sol_a_i:  23.0   sol_g_i:  0.2    d_i:  44.0    sol_taoi:  23.0    sol_deltai:  45.0  sol_deltai - sol_taoi:  22.0   sol_taoP:  23.0   sol_deltaP:  28.0    sol_deltaP - sol_taoP:  5.0   cI_i:  5709150.0     sol_c_i:  6974641.2    sol_gp_i:  0.8  total work:  6986566.0    wasted work:  0.04523068986967203
    i:  6.0  l_i:  5.0   p_i:  21.0    aI_i:  2.0        sol_a_i:  7.0    sol_g_i:  1.0    d_i:  21.0    sol_taoi:  7.0    sol_deltai:  25.0  sol_deltai - sol_taoi:  18.0   sol_taoP:  7.0    sol_deltaP:  11.0    sol_deltaP - sol_taoP:  4.0   cI_i:  4706531.0     sol_c_i:  4811988.6    sol_gp_i:  0.1  total work:  5931990.0    wasted work:  4.248158122316458
    i:  7.0  l_i:  6.0   p_i:  13.0    aI_i:  47.0       sol_a_i:  47.0   sol_g_i:  0.0    d_i:  66.0    sol_taoi:  47.0    sol_deltai:  66.0  sol_deltai - sol_taoi:  19.0   sol_taoP:  47.0   sol_deltaP:  52.0    sol_deltaP - sol_taoP:  5.0   cI_i:  4994677.0     sol_c_i:  5521965.0    sol_gp_i:  0.5  total work:  5800168.0    wasted work:  1.0552221935640484
    i:  8.0  l_i:  5.0   p_i:  19.0    aI_i:  43.0       sol_a_i:  48.0   sol_g_i:  1.0    d_i:  65.0    sol_taoi:  48.0    sol_deltai:  68.0  sol_deltai - sol_taoi:  20.0   sol_taoP:  48.0   sol_deltaP:  54.0    sol_deltaP - sol_taoP:  6.0   cI_i:  5174489.0     sol_c_i:  7019997.0    sol_gp_i:  1.0  total work:  7118388.0    wasted work:  0.37319643155163784
    i:  9.0  l_i:  4.0   p_i:  13.0    aI_i:  16.0       sol_a_i:  20.0   sol_g_i:  0.8    d_i:  45.0    sol_taoi:  20.0    sol_deltai:  46.0  sol_deltai - sol_taoi:  26.0   sol_taoP:  20.0   sol_deltaP:  27.0    sol_deltaP - sol_taoP:  7.0   cI_i:  6782880.0     sol_c_i:  7099252.8    sol_gp_i:  0.6  total work:  7118388.0    wasted work:  0.07257969079516388

Optimal objective =  771.0

Time: 113.000000
```