```
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=24274

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_2.xlsx  instance by BDC

        Master protblem status =  2 , is Optimal
        sol_MP_obj =  417.0
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 =  443.29342663352827                    ub =  443.29342663352827
        MPObj =  443.29342663352827        MPObj_Remove_Hua =  438.0        DualSPObj =  5.293426633528252        Hua =  5.2934266335282505        Deterministic_SP_SPObj =  328.0

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:  17.0    al_i:  0.0        sol_a_i:  0.0    sol_g_i:  0.0    d_i:  9.0  sol_taoi:  0.0    sol_deltai:  9.0    sol_deltai - sol_taoi:  9.0    sol_taoP:  -0.0  sol_deltaP:  2.0    sol_deltaP - sol_taoP:  2.0    cl_i:  2312530.0        sol_c_i:  2312530.0    sol_gp_i:  0.0  total work:  3163728.0    wasted work:  3.2285885512281713
    i:  1.0  l_i:  6.0    p_i:  10.0    al_i:  40.0        sol_a_i:  40.0  sol_g_i:  0.0    d_i:  61.0    sol_taoi:  40.0    sol_deltai:  61.0  sol_deltai - sol_taoi:  21.0  sol_taoP:  40.0  sol_deltaP:  44.0    sol_deltaP - sol_taoP:  4.0  cl_i:  5512574.0        sol_c_i:  5512574.0    sol_gp_i:  0.0  total work:  5668346.0    wasted work:  0.5908421962950039
    i:  2.0  l_i:  6.0    p_i:  25.0    al_i:  42.0        sol_a_i:  42.0  sol_g_i:  0.0    d_i:  51.0    sol_taoi:  42.0    sol_deltai:  51.0  sol_deltai - sol_taoi:  9.0    sol_taoP:  42.0  sol_deltaP:  45.0    sol_deltaP - sol_taoP:  3.0  cl_i:  2136032.0        sol_c_i:  2136032.0    sol_gp_i:  0.0  total work:  2240974.0    wasted work:  0.3980443325089894
    i:  3.0  l_i:  6.0    p_i:  4.0  al_i:  40.0        sol_a_i:  40.0  sol_g_i:  0.0    d_i:  56.0    sol_taoi:  40.0    sol_deltai:  56.0  sol_deltai - sol_taoi:  16.0  sol_taoP:  40.0    sol_deltaP:  48.0    sol_deltaP - sol_taoP:  8.0  cl_i:  4086770.0        sol_c_i:  4086770.0    sol_gp_i:  0.0  total work:  4218304.0    wasted work:  0.4989076178483106
    i:  4.0  l_i:  7.0    p_i:  0.0  al_i:  0.0        sol_a_i:  0.0    sol_g_i:  0.0    d_i:  19.0    sol_taoi:  0.0    sol_deltai:  19.0  sol_deltai - sol_taoi:  19.0  sol_taoP:  -0.0  sol_deltaP:  10.0    sol_deltaP - sol_taoP:  10.0    cl_i:  4903108.0        sol_c_i:  4903108.0    sol_gp_i:  0.0  total work:  5009236.0    wasted work:  0.4025428228975437
    i:  5.0  l_i:  4.0    p_i:  0.0  al_i:  29.0        sol_a_i:  29.0  sol_g_i:  0.0    d_i:  46.0    sol_taoi:  29.0    sol_deltai:  46.0  sol_deltai - sol_taoi:  17.0  sol_taoP:  29.0    sol_deltaP:  34.0    sol_deltaP - sol_taoP:  5.0  cl_i:  4458302.0        sol_c_i:  4458302.0    sol_gp_i:  0.0  total work:  4481948.0    wasted work:  0.0896891262459984
    i:  6.0  l_i:  7.0    p_i:  12.0    al_i:  15.0        sol_a_i:  19.0  sol_g_i:  0.8    d_i:  30.0    sol_taoi:  19.0    sol_deltai:  30.0  sol_deltai - sol_taoi:  11.0  sol_taoP:  19.0  sol_deltaP:  22.0    sol_deltaP - sol_taoP:  3.0  cl_i:  2683358.0        sol_c_i:  3948849.2    sol_gp_i:  0.8  total work:  3954660.0    wasted work:  0.022040327107765826
    i:  7.0  l_i:  5.0    p_i:  12.0    al_i:  2.0        sol_a_i:  5.2    sol_g_i:  0.4    d_i:  13.0    sol_taoi:  6.0    sol_deltai:  17.0  sol_deltai - sol_taoi:  11.0  sol_taoP:  6.0    sol_deltaP:  8.0    sol_deltaP - sol_taoP:  2.0  cl_i:  2870677.0        sol_c_i:  2870677.0    sol_gp_i:  0.0  total work:  2900084.0    wasted work:  0.111540562273368 63
    i:  8.0  l_i:  5.0    p_i:  7.0  al_i:  5.0        sol_a_i:  5.0    sol_g_i:  0.0    d_i:  36.0    sol_taoi:  5.0    sol_deltai:  28.0  sol_deltai - sol_taoi:  23.0  sol_taoP:  5.0    sol_deltaP:  13.0    sol_deltaP - sol_taoP:  8.0  cl_i:  5826902.0        sol_c_i:  6459647.6    sol_gp_i:  0.6  total work:  6591100.0    wasted work:  0.498598109572
    i:  9.0  l_i:  5.0    p_i:  16.0    al_i:  41.0        sol_a_i:  48.0  sol_g_i:  1.0    d_i:  59.0    sol_taoi:  48.0    sol_deltai:  62.0  sol_deltai - sol_taoi:  14.0  sol_taoP:  48.0  sol_deltaP:  54.0    sol_deltaP - sol_taoP:  6.0  cl_i:  3459980.0        sol_c_i:  5305488.0    sol_gp_i:  1.0  total work:  5536524.0    wasted work:  0.8763180652698336
    i:  10.0    l_i:  4.0    p_i:  21.0    al_i:  38.0        sol_a_i:  43.6  sol_g_i:  0.8    d_i:  56.0    sol_taoi:  44.0    sol_deltai:  59.0  sol_deltai - sol_taoi:  15.0  sol_taoP:  44.0    sol_deltaP:  48.0    sol_deltaP - sol_taoP:  4.0  cl_i:  3851069.0        sol_c_i:  4167441.8    sol_gp_i:  0.6  total work:  4218304.0    wasted work:  0.19291999817936378

Optimal objective =  766.0

Time: 63.000000
```