```
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=18845

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_12_5.xlsx  instance by BDC

      Master protblem status =  2 , is Optimal
      sol_MP_obj =  499.0
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 =  528.7362878249626                 ub =  528.7362878249626
      MPObj =  528.7362878249626     MPObj_Remove_Hua =  523.0     DualSPObj =  5.736287824962519       Hua =  5.73628782496252     Deterministic_SP_SPObj =  402.0

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: 16.0  al_i: 1.0  sol_a_i: 1.0  sol_g_i: 0.0  d_i: 25.0  sol_taoi: 1.0  sol_deltai: 32.0  sol_deltai - sol_taoi: 31.0  sol_taoP: 1.0  sol_deltaP: 7.0  sol_deltaP - sol_taoP: 6.0  cl_i: 8165121.0  sol_c_i: 8165121.0  sol_gp_i: 0.0  total work: 9491184.0  wasted work: 5.029748448665625
    i: 1.0  l_i: 7.0  p_i: 0.0  al_i: 7.0  sol_a_i: 7.0  sol_g_i: 0.0  d_i: 21.0  sol_taoi: 7.0  sol_deltai: 21.0  sol_deltai - sol_taoi: 14.0  sol_taoP: 7.0  sol_deltaP: 11.0  sol_deltaP - sol_taoP: 4.0  cl_i: 3555101.0  sol_c_i: 3555101.0  sol_gp_i: 0.0  total work: 3691016.0  wasted work: 0.5155247227321691
    i: 2.0  l_i: 6.0  p_i: 7.0  al_i: 7.0  sol_a_i: 7.0  sol_g_i: 0.0  d_i: 11.0  sol_taoi: 7.0  sol_deltai: 11.0  sol_deltai - sol_taoi: 4.0  sol_taoP: 7.0  sol_deltaP: 8.0  sol_deltaP - sol_taoP: 1.0  cl_i: 1040864.0  sol_c_i: 1040864.0  sol_gp_i: 0.0  total work: 1054576.0  wasted work: 0.052009527999878624
    i: 3.0  l_i: 6.0  p_i: 28.0  al_i: 15.0  sol_a_i: 15.0  sol_g_i: 0.0  d_i: 25.0  sol_taoi: 15.0  sol_deltai: 26.0  sol_deltai - sol_taoi: 11.0  sol_taoP: 15.0  sol_deltaP: 18.0  sol_deltaP - sol_taoP: 3.0  cl_i: 2720048.0  sol_c_i: 2720048.0  sol_gp_i: 0.0  total work: 3954660.0  wasted work: 4.682875392574836
    i: 4.0  l_i: 5.0  p_i: 6.0  al_i: 23.0  sol_a_i: 23.0  sol_g_i: 0.0  d_i: 40.0  sol_taoi: 23.0  sol_deltai: 42.0  sol_deltai - sol_taoi: 19.0  sol_taoP: 23.0  sol_deltaP: 30.0  sol_deltaP - sol_taoP: 7.0  cl_i: 5002583.0  sol_c_i: 5002583.0  sol_gp_i: 0.0  total work: 5536524.0  wasted work: 2.025234786302742
    i: 5.0  l_i: 5.0  p_i: 11.0  al_i: 26.0  sol_a_i: 26.0  sol_g_i: 0.0  d_i: 32.0  sol_taoi: 26.0  sol_deltai: 31.0  sol_deltai - sol_taoi: 5.0  sol_taoP: 26.0  sol_deltaP: 27.0  sol_deltaP - sol_taoP: 1.0  cl_i: 1259467.0  sol_c_i: 1259467.0  sol_gp_i: 0.0  total work: 1581864.0  wasted work: 1.2228497519382198
    i: 6.0  l_i: 7.0  p_i: 11.0  al_i: 35.0  sol_a_i: 39.0  sol_g_i: 0.8  d_i: 46.0  sol_taoi: 39.0  sol_deltai: 48.0  sol_deltai - sol_taoi: 9.0  sol_taoP: 39.0  sol_deltaP: 42.0  sol_deltaP - sol_taoP: 3.0  cl_i: 2258618.0  sol_c_i: 3524109.2  sol_gp_i: 0.8  total work: 3691016.0  wasted work: 0.6330764212346945
    i: 7.0  l_i: 6.0  p_i: 0.0  al_i: 36.0  sol_a_i: 39.2  sol_g_i: 0.4  d_i: 55.0  sol_taoi: 40.0  sol_deltai: 54.0  sol_deltai - sol_taoi: 14.0  sol_taoP: 40.0  sol_deltaP: 44.0  sol_deltaP - sol_taoP: 4.0  cl_i: 3584322.0  sol_c_i: 3584322.0  sol_gp_i: 0.0  total work: 3691016.0  wasted work: 0.4046896572650999
    i: 8.0  l_i: 7.0  p_i: 18.0  al_i: 39.0  sol_a_i: 39.0  sol_g_i: 0.0  d_i: 75.0  sol_taoi: 39.0  sol_deltai: 58.0  sol_deltai - sol_taoi: 19.0  sol_taoP: 39.0  sol_deltaP: 45.0  sol_deltaP - sol_taoP: 6.0  cl_i: 4975568.0  sol_c_i: 5608313.6  sol_gp_i: 0.6  total work: 5800168.0  wasted work: 0.727702507927358
    i: 9.0  l_i: 5.0  p_i: 6.0  al_i: 43.0  sol_a_i: 50.0  sol_g_i: 1.0  d_i: 70.0  sol_taoi: 50.0  sol_deltai: 65.0  sol_deltai - sol_taoi: 15.0  sol_taoP: 50.0  sol_deltaP: 56.0  sol_deltaP - sol_taoP: 6.0  cl_i: 3811906.0  sol_c_i: 5657414.0  sol_gp_i: 1.0  total work: 5800168.0  wasted work: 0.5414650058412102
    i: 10.0  l_i: 6.0  p_i: 11.0  al_i: 47.0  sol_a_i: 49.8  sol_g_i: 0.4  d_i: 67.0  sol_taoi: 50.0  sol_deltai: 60.0  sol_deltai - sol_taoi: 10.0  sol_taoP: 50.0  sol_deltaP: 52.0  sol_deltaP - sol_taoP: 2.0  cl_i: 2487225.0  sol_c_i: 2592682.6  sol_gp_i: 0.2  total work: 2636440.0  wasted work: 0.1659715373761584
    i: 11.0  l_i: 5.0  p_i: 0.0  al_i: 50.0  sol_a_i: 56.0  sol_g_i: 1.0  d_i: 82.0  sol_taoi: 56.0  sol_deltai: 75.0  sol_deltai - sol_taoi: 19.0  sol_taoP: 56.0  sol_deltaP: 62.0  sol_deltaP - sol_taoP: 6.0  cl_i: 5002583.0  sol_c_i: 6320803.0  sol_gp_i: 1.0  total work: 6327456.0  wasted work: 0.025234786302741577

Optimal objective =  925.0

Time: 220.000000
```