```
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=18564
 2
 3
    import sys; print('Python %s on %s' % (sys.version, sys.platform))
    6
    PyDev console: starting.
 8 Python 3.9.7 (tags/v3.9.7:1016ef3, Aug 30 2021, 20:19:38) [MSC v.1929 64 bit (AMD64)] on win32
    main RO BDC.py', wdir='E:/1 0000/3 00000/1 0000000/1 0000000/1 0000000/1 LW 00001/4 0000/3 python code/9 Code for
10 Backend TkAgg is interactive backend. Turning interactive mode on.
11
    Waiting 5s.....
    Optimize the ./R 12 3.xlsx instance by BDC
13
14
15
           Master protblem status = 2, is Optimal
16
          sol MP obj = 650.0
    The initial lb = -inf
                                 ub = inf
17
18
19
     The current iteration cnt = 0
20
          Dual problem status = 2, is Optimal
21
           Add optimal cut
22
           Master protblem status = 2, is Optimal
           Deterministic Sub problem Status= 2, is Optimal
           1b = 685.1488105029357
                                                          ub = 685.1488105029357
24
          MPObj = 685.1488105029357 \qquad MPObj\_Remove\_Hua = 678.0 \qquad DualSPObj = 7.148810502935689
2.5
                                                                                                                                            Hua = 7.148810502935689
     Deterministic\_SP\_SPObj = 536.0
26
    ub - 1b = 0.0
27
28
    Iteration cycle stopped by termination criterion 1: Because ub - lb \leq eps, the iteration stop, and cnt = 0
29
      i: 0.0 l_i: 4.0 p_i: 11.0 al_i: 20.0 sol_a_i: 20.0 sol_g_i: 0.0 d_i: 40.0 sol_taoi: 20.0 sol_deltai: 40.0 sol_deltai: 40.0 sol_deltai: 40.0 sol_deltai: 40.0 sol_deltai: 5141058.0 wasted work: 0.0 sol_deltai: 40.0 sol_deltai: 40
30
     04115777336104747
31
        i: 1.0 1_i: 7.0 p_i: 22.0 aI_i: 18.0
                                                             sol a i: 18.0 sol g i: 0.0 d i: 35.0 sol taoi: 18.0 sol deltai: 35.0 sol deltai - sol taoi: 17.0 sol taoP
       18.0 sol_deltaP: 22.0 sol_deltaP - sol_taoP: 4.0 cl_i: 4417900.0 sol_c_i: 4417900.0 sol_gp_i: 0.0 total work: 4481948.0 wasted work: 0.
     2429336529562592
        i: 2.0 1_i: 4.0 p_i: 0.0 aI_i: 63.0
                                                          sol_a_i: 63.0 sol_g_i: 0.0 d_i: 83.0 sol_taoi: 63.0 sol_deltai: 84.0 sol_deltai - sol_taoi: 21.0 sol_taoP:
             sol deltaP: 70.0 sol deltaP - sol taoP: 7.0 cl i: 5501150.0 sol c i: 5501150.0 sol gp i: 0.0 total work: 5536524.0 wasted work: 0.
     13417335497868338
33
        i: 3.0 1_i: 7.0 p_i: 19.0 aI_i: 54.0
                                                              sol_a_i: 54.0 sol_g_i: 0.0 d_i: 78.0 sol_taoi: 54.0 sol_deltai: 78.0 sol_deltai - sol_taoi: 24.0 sol_taoP
       54.0 sol_deltaP: 58.0 sol_deltaP - sol_taoP: 4.0 cl_i: 6074377.0 sol_c_i: 6074377.0 sol_gp_i: 0.0 total work: 7382032.0 wasted work: 4.
     959927022803478
                                                             sol_a_i: 40.0 sol_g_i: 0.0 d_i: 49.0 sol_taoi: 40.0 sol_deltai: 49.0 sol_deltai - sol_taoi: 9.0 sol_taoP
34
        i: 4.0 1_i: 6.0 p_i: 22.0 aI_i: 40.0
       40.0 sol_deltaP: 43.0 sol_deltaP - sol_taoP: 3.0 cI_i: 2354017.0 sol_c_i: 2354017.0 sol_gp_i: 0.0 total work: 2372796.0 wasted work: 0.
     071228626481164
                                                          sol_a_i: 61.0 sol_g_i: 0.0 d_i: 83.0 sol_taoi: 61.0 sol_deltai: 83.0 sol_deltai - sol_taoi: 22.0 sol_taoP:
        i: 5.0 1_i: 7.0 p_i: 7.0 aI_i: 61.0
35
     61.0
             sol deltaP: 66.0 sol deltaP - sol taoP: 5.0 cI i: 5725327.0
                                                                                             sol c i: 5725327.0 sol gp i: 0.0 total work: 5931990.0 wasted work: 0.
     7838714326895359
        i: 6.0 l_i: 6.0 p_i: 0.0 al_i: 21.0 sol_a_i: 25.0 sol_g_i: 0.8 d_i: 34.0 sol_taoi: 25.0 sol_deltai: 34.0 sol_deltai: 3691016.0 wasted work: 0.
                                                        sol a i: 25.0 sol g i: 0.8 d i: 34.0 sol taoi: 25.0 sol deltai: 34.0 sol deltai - sol taoi: 9.0 sol taoP:
36
     6101439820363816
        i: 7.0 1 i: 5.0 p i: 29.0 aI i: 28.0
                                                             sol a i: 31.2 sol g i: 0.4 d i: 39.0 sol taoi: 32.0 sol deltai: 41.0 sol deltai - sol taoi: 9.0 sol taoP
       32.0 sol deltaP: 35.0 sol deltaP - sol taoP: 3.0 cl i: 2354218.0 sol c i: 2776048.4 sol gp i: 0.4 total work: 3163728.0 wasted work: 1.
     470466234771131
        i: 8.0 1_i: 5.0 p_i: 14.0 aI i: 53.0
                                                             sol_a_i: 59.0 sol_g_i: 0.6 d_i: 70.0 sol_taoi: 59.0 sol_deltai: 76.0 sol_deltai - sol_taoi: 17.0 sol_taoP
       59.0 sol_deltaP: 65.0 sol_deltaP - sol_taoP: 6.0 cl_i: 4419180.0 sol_c_i: 4630095.2 sol_gp_i: 0.2 total work: 4745592.0 wasted work: 0.
     4380786211709723
39
        i: 9.0 1 i: 7.0 p i: 15.0 aI i: 21.0
                                                              sol_a_i: 25.2 sol_g_i: 0.6 d_i: 40.0 sol_taoi: 26.0 sol_deltai: 44.0 sol_deltai - sol_taoi: 18.0 sol_taoP
     : 26.0 sol deltaP: 31.0 sol deltaP - sol taoP: 5.0 cl i: 4635974.0 sol c i: 6481482.0 sol gp i: 1.0 total work: 7382032.0 wasted work: 3.
     415780370499613
40
        i: 10.0 \quad l_i: 4.0 \quad p_i: 7.0 \quad aI_i: 25.0 \quad
                                                             sol_a_i: 29.2 sol_g_i: 0.6 d_i: 48.0 sol_taoi: 30.0 sol_deltai: 52.0 sol_deltai - sol_taoi: 22.0 sol_taoP
     : 30.0 sol_deltaP: 36.0 sol_deltaP - sol_taoP: 6.0 cl_i: 5710686.0 sol_c_i: 5816143.6 sol_gp_i: 0.2 total work: 6063812.0 wasted work: 0.
     9394046517273307
        i: 11.0 l_i: 7.0 p_i: 0.0 aI_i: 43.0
                                                              sol a i: 46.6 sol g i: 0.6 d i: 60.0 sol taoi: 47.0 sol deltai: 62.0 sol deltai - sol taoi: 15.0 sol taoP
41
      47.0 sol deltaP: 57.0 sol deltaP - sol taoP: 10.0 cl i: 3923037.0 sol c i: 5241257.0 sol gp i: 1.0 total work: 5272880.0 wasted work: 0.
     1199458360516454
42
43
    Optimal objective = 1214.0
44
45
    Time: 230.000000
46
47
48
49
```