```
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=54331
 2
 3
    import sys; print('Python %s on %s' % (sys.version, sys.platform))
    sys.path.extend(['E:\\1\ ]==-\\3\ python\_code\) Code for this
     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.....
13 Optimize the ./R 14 4.xlsx instance by BDC
14
15
          Master protblem status = 2, is Optimal
16
          sol MP obj = 469.0
    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
          lb = 504.55690421053976
                                                           ub = 504.55690421053976
24
          MPObj = 504.55690421053976
                                                     MPObj_Remove_Hua = 500.0 DualSPObj = 4.556904210539765
2.5
                                                                                                                                         Hua = 4.556904210539764
     Deterministic\_SP\_SPObj = 406.0
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
30
       i: 0.0 l_i: 5.0 p_i: 16.0 al_i: 3.0 sol_a_i: 3.0 sol_g_i: 0.0 d_i: 13.0 sol_taoi: 3.0 sol_deltai: 12.0 sol_deltai: 12.0 sol_deltai: 9.0 sol_taoi: 9.0 sol_taoi: 3.0 sol_taoi: 9.0 sol_ta
           sol_deltaP: 5.0 sol_deltaP - sol_taoP: 2.0 el_i: 2121353.0 sol_e_i: 2121353.0 sol_gp_i: 0.0 total work: 2636440.0 wasted work: 1.
     9537216853029085
31
       i: 1.0 1_i: 6.0 p_i: 10.0 aI_i: 7.0
                                                           sol_a_i: 7.0 sol_g_i: 0.0 d_i: 15.0 sol_taoi: 7.0 sol_deltai: 14.0 sol_deltai - sol_taoi: 7.0 sol_taoP: 7
          sol_deltaP: 9.0 sol_deltaP - sol_taoP: 2.0 cl_i: 1695202.0 sol_e_i: 1695202.0 sol_gp_i: 0.0 total work: 2636440.0 wasted work: 3.
     5701096933743988
        i: 2.0 1_i: 5.0 p_i: 5.0 aI_i: 9.0
                                                        sol_a_i: 9.0 sol_g_i: 0.0 d_i: 21.0 sol_taoi: 9.0 sol_deltai: 20.0 sol_deltai - sol_taoi: 11.0 sol_taoP: 9.0
        sol deltaP: 12.0
                              sol deltaP - sol taoP: 3.0 cl i: 2765581.0 sol c i: 2765581.0 sol gp i: 0.0 total work: 2900084.0 wasted work: 0.
     5101690157940253
        i: 3.0 1_i: 5.0 p_i: 0.0 aI_i: 11.0
                                                         sol_a_i: 11.0 sol_g_i: 0.0 d_i: 26.0 sol_taoi: 11.0 sol_deltai: 25.0 sol_deltai - sol_taoi: 14.0 sol_taoP:
     11.0 sol deltaP: 16.0 sol deltaP - sol taoP: 5.0 cl i: 3509310.0 sol c i: 3509310.0 sol gp i: 0.0 total work: 3691016.0 wasted work: 0.
     689209691\overline{8}572014
                                                          sol_a_i: 15.0 sol_g_i: 0.0 d_i: 28.0 sol_taoi: 15.0 sol_deltai: 27.0 sol_deltai - sol_taoi: 12.0 sol_taoP
34
        i: 4.0 1_i: 5.0 p_i: 10.0 aI_i: 15.0
      15.0 sol_deltaP: 17.0 sol_deltaP - sol_taoP: 2.0 cI_i: 2945796.0 sol_c_i: 2945796.0 sol_gp_i: 0.0 total work: 3163728.0 wasted work: 0.
     8266146773679659
      i: 5.0 l_i: 7.0 p_i: 15.0 al_i: 19.0 sol_a_i: 19.0 sol_g_i: 0.0 d_i: 27.0 sol_taoi: 19.0 sol_deltai: 26.0 sol_deltai - sol_taoi: 7.0 sol_taoi: 19.0 sol_deltai - sol_taoi: 21.0 sol_deltai - sol_taoi: 19.0 sol_deltai - sol_taoi: 1674800.0 sol_c_i: 1674800.0 sol_gp_i: 0.0 total work: 2109152.0 wasted work: 1.
                                                           sol a i: 19.0 sol g i: 0.0 d i: 27.0 sol taoi: 19.0 sol deltai: 26.0 sol deltai - sol taoi: 7.0 sol taoP
35
    sol a i: 22.0 sol g i: 0.0 d i: 32.0 sol taoi: 22.0 sol deltai: 31.0 sol deltai - sol taoi: 9.0 sol taoP:
36
     3743495016006433
        i: 7.0 1_i: 5.0 p_i: 0.0 aI_i: 26.0
                                                       sol a i: 27.0 sol g i: 0.2 d i: 49.0 sol taoi: 27.0 sol deltai: 39.0 sol deltai - sol taoi: 12.0 sol taoP:
            sol_deltaP: 32.0 sol_deltaP - sol_taoP: 5.0 cl_i: 3017973.0
                                                                                          sol c i: 4283464.2 sol gp i: 0.8 total work: 4481948.0 wasted work: 0.
     7528477795815562
      i: 8.0 1_i: 5.0 p_i: 16.0 aI_i: 29.0 sol_a_i: 37.0 sol_g_i: 1.0 d_i: 53.0 sol_taoi: 37.0 sol_deltai: 44.0 sol_deltai - sol_taoi: 7.0 sol_deltaP: 39.0 sol_deltaP - sol_taoP: 2.0 cI_i: 1586573.0 sol_c_i: 2008403.4 sol_gp_i: 0.4 total work: 2109152.0 wasted work: 0.
                                                           sol_a_i: 37.0 sol_g_i: 1.0 d_i: 53.0 sol_taoi: 37.0 sol_deltai: 44.0 sol_deltai - sol_taoi: 7.0 sol_taoP
     38213879322116223
                                                      sol_a_i: 35.0 sol_g_i: 0.2 d_i: 62.0 sol_taoi: 35.0 sol_deltai: 43.0 sol_deltai - sol_taoi: 8.0 sol_taoP:
39
       i: 9.0 1_i: 5.0 p_i: 5.0 aI_i: 33.0
             sol deltaP: 37.0 sol deltaP - sol taoP: 2.0 cI i: 1846166.0 sol c i: 2057081.2 sol gp i: 0.2 total work: 2109152.0 wasted work: 0.
     19750421022287648
        sol_a_i: 42.0 sol_g_i: 1.0 d_i: 65.0 sol_taoi: 42.0 sol_deltai: 57.0 sol_deltai - sol_taoi: 15.0
     sol_taoP: 42.0 sol_deltaP: 49.0 sol_deltaP - sol_taoP: 7.0 cl_i: 3708018.0 sol_c_i: 5553526.0 sol_gp_i: 1.0 total work: 5668346.0 wasted work
     : 0.43551152311450286
        sol_a_i: 43.2 sol_g_i: 0.6 d_i: 68.0 sol_taoi: 44.0 sol_deltai: 58.0 sol_deltai - sol_taoi: 14.0 sol_taoP
                                                                                          sol c i: 3436595.0 sol gp i: 0.0 total work: 3691016.0 wasted work: 0.
      44.0 sol deltaP: 48.0 sol deltaP - sol taoP: 4.0 cI i: 3436595.0
     9650172201908634
        sol a i: 45.6 sol g i: 0.6 d i: 59.0 sol taoi: 46.0 sol deltai: 50.0 sol deltai - sol taoi: 4.0 sol taoP
      46.0 sol_deltaP: 50.0 sol_deltaP - sol_taoP: 4.0 cI_i: 1001453.0 sol_c_i: 1792385.0 sol_gp_i: 0.6 total work: 1845508.0 wasted work: 0.
     20149519807012486
       i: 13.0 1 i: 5.0 p i: 21.0 aI i: 38.0
                                                              sol_a_i: 41.6 sol_g_i: 0.4 d_i: 69.0 sol_taoi: 42.0 sol_deltai: 54.0 sol_deltai - sol_taoi: 12.0
     sol_taoP: 42.0 sol_deltaP: 46.0 sol_deltaP - sol_taoP: 4.0 cl_i: 2952281.0 sol_c_i: 5061433.0 sol_gp_i: 1.0 total work: 5404702.0 wasted work
     : 1.30201711398704\overline{3}1
45
    Optimal objective = 906.0
46
47
    Time: 522.000000
48
49
50
51
```