```
this paper\Scripts\python.exe" "D:\Python\Pycharm\setroute\PyCharm Community Edition 2021.2.3\plugins\python-ce\helpers\pydev\pydevconsole.py" --mode=
           client --port=56560
   3
           import sys; print('Python %s on %s' % (sys.version, sys.platform))
           6
          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
   8
          this paper')
10 Backend TkAgg is interactive backend. Turning interactive mode on.
           Waiting 5s.....
12
13 Optimize the ./R 7 1.xlsx instance by BDC
14
15
                         Master protblem status = 2, is Optimal
                         sol_MP_obj = 240.0
16
          The initial lb = -inf
17
                                                                               ub = inf
19
           The current iteration cnt = 0
                         Dual problem status = 2, is Optimal
20
21
                         Add optimal cut
                         Master protblem status = 2, is Optimal
                         Deterministic Sub problem Status= 2, is Optimal
23
                         1b = 256.00720118317935
                                                                                                                                             ub = 256.00720118317935
24
25
                         MPObj = 256.00720118317935
                                                                                                                               MPObj_Remove_Hua = 252.0
                                                                                                                                                                                                                              DualSPObj = 4.007201183179355
                                                                                                                                                                                                                                                                                                                                      Hua = 4.007201183179354
           Deterministic_SP_SPObj = 155.0
26
           ub - lb = 0.0
27
28
29 Iteration cycle stopped by termination criterion 1: Because ub - lb \le eps, the iteration stop, and cnt = 0
                  i: 0.0 l_i: 7.0 p_i: 14.0 al_i: 5.0 sol_a_i: 5.0 sol_g_i: 0.0 d_i: 31.0 sol_taoi: 5.0 sol_deltai: 29.0 sol_deltai - sol_taoi: 24.0 sol_taoi: 5.0 sol_taoi: 5.0 sol_taoi: 5.0 sol_taoi: 5.0 sol_taoi: 24.0 sol_taoi: 5.0 sol_taoi: 
30
                          sol_deltaP: 9.0 sol_deltaP - sol_taoP: 4.0 cI_i: 6150034.0 sol_c_i: 6150034.0 sol_gp_i: 0.0 total work: 6327456.0 wasted work: 0.
           6729605073508216
                i: 1.0 l_i: 6.0 p_i: 21.0 al_i: 13.0 sol_a_i: 13.0 sol_g_i: 0.0 d_i: 21.0 sol_taoi: 13.0 sol_deltai: 19.0 sol_deltai - sol_taoi: 6.0 sol_deltai - sol_taoi: 14.0 sol_delta
                                                                                                                                          sol_a_i: 13.0 sol_g_i: 0.0 d_i: 21.0 sol_taoi: 13.0 sol_deltai: 19.0 sol_deltai - sol_taoi: 6.0 sol_taoP
31
                  i: 2.0 l_i: 7.0 p_i: 7.0 al_i: 18.0 sol_a_i: 18.0 sol_g_i: 0.0 d_i: 45.0 sol_taoi: 18.0 sol_deltai: 43.0 sol_deltai - sol_taoi: 25.0 sol_taoi: 25
32
                                                                                                                                  sol a i: 18.0 sol g i: 0.0 d i: 45.0 sol taoi: 18.0 sol deltai: 43.0 sol deltai - sol taoi: 25.0 sol taoP:
           4544916630001062
                i: 3.0\ l\_i: 7.0\ p\_i: 21.0\ al\_i: 21.0\ sol\_a\_i: 21.0\ sol\_a\_i
                                                                                                                                            sol a i: 21.0 sol g i: 0.0 d i: 37.0 sol taoi: 21.0 sol deltai: 35.0 sol deltai - sol taoi: 14.0 sol taoP
            1251801671951571
                    i: 4.0 \ 1_i: 7.0 \ p_i: 0.0 \ aI_i: 4.0
34
                                                                                                                                        sol_a_i: 8.0 sol_g_i: 0.8 d_i: 54.0 sol_taoi: 8.0 sol_deltai: 40.0 sol_deltai - sol_taoi: 32.0 sol_taoP: 8.0
                    sol deltaP: 17.0 sol deltaP - sol taoP: 9.0 cl i: 8295964.0 sol c i: 8503577.696955368 sol gp i: 0.15749548402798386 total work: 8700252.0
                    wasted work: 0.7459843692427367
                                                                                                                                               sol\_a\_i: 19.0 \quad sol\_g\_i: 0.0 \quad d\_i: 48.0 \quad sol\_taoi: 19.0 \quad sol\_deltai: 28.0 \quad sol\_deltai - sol\_taoi: 9.0 \quad sol\_taoP
                    i: 5.0 1_i: 6.0 p_i: 28.0 aI_i: 19.0
            : 19.0 sol_deltaP: 23.0 sol_deltaP - sol_taoP: 4.0 cl_i: 2220586.0 sol_c_i: 4329738.0 sol_gp_i: 1.0 total work: 4481948.0 wasted work: 0.
           5773315531550121
                    i: 6.0 1_i: 7.0 p_i: 14.0 aI_i: 28.0
                                                                                                                                            sol_a_i: 38.0 sol_g_i: 1.0 d_i: 71.0 sol_taoi: 38.0 sol_deltai: 58.0 sol_deltai - sol_taoi: 20.0 sol_taoP
36
            : 38.0 sol_deltaP: 43.0 sol_deltaP - sol_taoP: 5.0 cl_i: 5118839.0 sol_c i: 6812763.606089266 sol_gp_i: 0.642504515972018 total work: 7645676.
           0 wasted work: 3.159231364683945
37
38 Optimal objective = 407.0
39
40
          Time: 37.000000
41
42
43
44
```