```
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=32184
 3
    import sys; print('Python %s on %s' % (sys.version, sys.platform))
    4
 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 13 1.xlsx instance by CCG
14
15
           Master protblem status = 2, is Optimal and MP obj = 465.0
    The initial lb = -inf
                                  ub = inf
16
17
     The current iteration cnt = 0
19
           The SP model was solved Optimal 2 and SPObj = 465.0
20
           Master protblem status = 2, is Optimal
21
           Deterministic Sub problem Status= 2, is Optimal
                                       ub = 865.0
           MPObj = 865.0 MP delete Hua Obj = 491.0
23
                                                                             Hua = 374.0
                                                                                                SPObi = 465.0 Deter SPObi = 374.0
24
25
    ub - 1b = 0.0
26
27 Iteration cycle stopped by termination criterion 1: Because ub - lb \le eps, the iteration stop, and cnt = 0
28
       i: 0.0 1_i: 5.0 p_i: 23.0 aI_i: 1.0
                                                              sol_a_i: 1.0 sol_g_i: 0.0 d_i: 14.0 sol_taoi: 1.0 sol_deltai: 17.0 sol_deltai - sol_taoi: 16.0 sol_taoP: 1
           sol_deltaP: 4.0 sol_deltaP - sol_taoP: 3.0 cl_i: 4045894.0 sol_c_i: 4045894.0 sol_gp_i: 0.0 total work: 4086482.0 wasted work: 0.
     1539500235165602
                                                             sol_a_i: 4.0 sol_g_i: 0.0 d_i: 15.0 sol_taoi: 4.0 sol_deltai: 13.0 sol_deltai - sol_taoi: 9.0 sol_taoP: 4
29
        i: 1.0 1_i: 6.0 p_i: 17.0 aI_i: 4.0
          sol deltaP: 6.0 sol deltaP - sol taoP: 2.0 cl i: 2245580.0 sol c i: 2245580.0 sol gp i: 0.0 total work: 2372796.0 wasted work: 0.
     4825294715601341
                                                          sol_a_i: 9.0 sol_g_i: 0.0 d_i: 16.0 sol_taoi: 9.0 sol_deltai: 15.0 sol_deltai - sol_taoi: 6.0 sol_taoP: 9.0
30
        i: 2.0 l_i: 5.0 p_i: 9.0 al_i: 9.0
         sol_deltaP: 10.0 sol_deltaP - sol_taoP: 1.0 cl_i: 1402489.0 sol_c_i: 1402489.0 sol_gp_i: 0.0 total work: 1450042.0 wasted work: 0.
     1803682238169653
       i: 3.0 1_i: 6.0 p_i: 28.0 aI_i: 13.0 sol_a_i: 13.0 sol_g_i: 0.0 d_i: 18.0 sol_taoi: 13.0 sol_deltai: 17.0 sol_deltai - sol_taoi: 4.0 sol_taoi: 13.0 sol_deltaP: 14.0 sol_deltaP - sol_taoP: 1.0 cI_i: 1000000.0 sol_c_i: 1000000.0 sol_gp_i: 0.0 total work: 1318220.0 wasted work: 1.
31
                                                            sol a i: 13.0 sol g i: 0.0 d i: 18.0 sol taoi: 13.0 sol deltai: 17.0 sol deltai - sol taoi: 4.0 sol taoP
     2070064177451412
                                                             sol a i: 15.0 sol g i: 0.0 d i: 35.0 sol taoi: 15.0 sol deltai: 36.0 sol deltai - sol taoi: 21.0 sol taoP
        i: 4.0 1_i: 7.0 p_i: 14.0 aI_i: 15.0
       15.0 sol_deltaP: 19.0 sol_deltaP - sol_taoP: 4.0 cl_i: 5281421.0 sol_c_i: 5281421.0 sol_gp_i: 0.0 total work: 5668346.0 wasted work: 1.
     4676040418139613
     i: 5.0 l_i: 7.0 p_i: 21.0 al_i: 19.0 sol_a_i: 19.0 sol_g_i: 0.0 d_i: 35.0 sol_taoi: 19.0 sol_deltai: 36.0 sol_deltai - sol_taoi: 17.0 sol_taoP: 19.0 sol_deltaP: 22.0 sol_deltaP - sol_taoP: 3.0 cl_i: 4386290.0 sol_c_i: 4386290.0 sol_g_i: 0.0 total work: 4481948.0 wasted work: 0.
33
     3628301800913353
        i: 6.0 l_i: 7.0 p_i: 7.0 al_i: 23.0 sol_a_i: 23.0 sol_g_i: 0.0 d_i: 39.0 sol_taoi: 23.0 sol_deltai: 39.0 sol
34
     23.0 sol_deltaP: 26.0 sol_deltaP - sol_taoP: 3.0 cl_i: 3981008.0 sol_c_i: 3981008.0 sol_gp_i: 0.0 total work: 4086482.0 wasted work: 0.
     400062205094749
                                                              sol\_a\_i: \ 28.571428571428571428573 \ sol\_g\_i: \ 0.11428571428571428 \ d\_i: \ 40.0 \ sol\_taoi: \ 29.0 \ sol\_deltai: \ 34.0
        i: 7.0 1_i: 6.0 p_i: 28.0 aI_i: 28.0
35
        sol_deltai - sol_taoi: 5.0 sol_taoP: 29.0 sol_deltaP: 31.0 sol_deltaP - sol_taoP: 2.0 cl_i: 1080122.0 sol_c_i: 1321819.3142857144 sol_gp_i: 0.
     15279272698899177 total work: 1713686.0 wasted work: 1.486347824013767
                                                              sol_a_i: 42.0 sol_g_i: 1.0 d_i: 59.0 sol_taoi: 42.0 sol_deltai: 60.0 sol_deltai - sol_taoi: 18.0 sol_taoP
36
        i: 8.0 1 i: 5.0 p i: 14.0 aI i: 34.0
     : 42.0 sol_deltaP: 46.0 sol_deltaP - sol_taoP: 4.0 cl_i: 4586182.0 sol_c_i: 5640758.0 sol_gp_i: 1.0 total work: 5668346.0 wasted work: 0.
     10464110694724704
37
        i: 9.0 1_i: 5.0 p_i: 22.0 aI_i: 35.0
                                                              sol a i: 37.0 sol g i: 0.2 d i: 55.0 sol taoi: 37.0 sol deltai: 44.0 sol deltai - sol taoi: 7.0 sol taoP
     : 37.0 sol_deltaP: 39.0 sol_deltaP - sol_taoP: 2.0 cl_i: 1843576.0 sol_c_i: 2372796.0 sol_gp_i: 0.501832015900229 total work: 2372796.0
       i: 10.0 1 i: 5.0 p i: 9.0 aI i: 42.0
                                                           sol a i: 49.0 sol g i: 1.0 d i: 63.0 sol taoi: 49.0 sol deltai: 61.0 sol deltai - sol taoi: 12.0 sol taoP
     : 49.0 sol_deltaP: 51.0 sol_deltaP - sol_taoP: 2.0 cl_i: 3159187.0 sol_c_i: 3163728.0 sol_gp_i: 0.0024605691224313304 total work: 3163728.0
     wasted work: 0.0
39
        i: 11.0    1_i: 5.0    p_i: 25.0    aI_i: 43.0
                                                                 sol_a_i: 45.0 sol_g_i: 0.2857142857142857 d_i: 62.0 sol_taoi: 45.0 sol_deltai: 51.0 sol_deltai
     sol taoi: 6.0 sol taoP: 45.0 sol deltaP: 47.0 sol deltaP - sol taoP: 2.0 cI i: 1570504.0 sol c i: 2097792.0 sol gp i: 1.0 total work: 2504618.0
        wasted work: 1.5430884070944153
        sol_a_i: 56.0 sol_g_i: 1.0 d_i: 70.0 sol_taoi: 56.0 sol_deltai: 68.0 sol_deltai - sol_taoi: 12.0
40
     sol_taoP: 56.0 sol_deltaP: 59.0 sol_deltaP - sol_taoP: 3.0 cl_i: 2975335.0 sol_c_i: 4218304.0 sol_gp_i: 0.9429146879883479 total work:
     4481948.0 wasted work: 1.0
    Time: 209.000000
42
43
44
45
```