```
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=7214
 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 CCG.py', wdir='E:/1 0000/3 00000/1 000000/1 0000000/1 000000/1 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 15 2.xlsx instance by CCG
14
15
          Master protblem status = 2, is Optimal and MP obj = 711.0
16
    The initial lb = -inf
                              ub = inf
17
18
    The current iteration cnt = 0
19
          The SP model was solved Optimal 2 and SPObj = 710.0
20
          Deterministic Sub problem Status= 2, is Optimal
21
         1b = 1307.0
                                      ub = 1307.0
22
          MPObj = 1307.0
                                  MP_delete_Hua_Obj = 738.0
                                                                        Hua = 569.0
                                                                                           SPObj = 710.0
                                                                                                                Deter_SP_Obj = 569.0
24
    ub - 1b = 0.0
25
26
   Iteration cycle stopped by termination criterion 1: Because ub - 1b \le eps, the iteration stop, and ext{cnt} = 0
      i: 0.0 1 i: 5.0 p i: 18.0 aI i: 7.0 sol_a i: 7.0 sol_g i: 0.0 d_i: 27.0 sol_taoi: 7.0 sol_deltai: 27.0 sol_d
27
    443579220463959
                                                     sol_a_i: 9.0 sol_g_i: 0.0 d_i: 26.0 sol_taoi: 9.0 sol_deltai: 26.0 sol_deltai - sol_taoi: 17.0 sol_taoP: 9.0
       i: 1.0 1_i: 7.0 p_i: 0.0 aI_i: 9.0
       sol deltaP: 15.0 sol deltaP - sol taoP: 6.0 cl i: 4446863.0 sol c i: 4446863.0 sol gp i: 0.0 total work: 4481948.0 wasted work: 0.
    13307717983341172\\
29
       i: 2.0 1_i: 7.0 p_i: 9.0 aI_i: 36.0
                                                   sol_a_i: 36.0 sol_g_i: 0.0 d_i: 51.0 sol_taoi: 36.0 sol_deltai: 51.0 sol_deltai - sol_taoi: 15.0 sol_taoP:
    36.0 sol deltaP: 42.0 sol deltaP - sol taoP: 6.0 cl i: 3705326.0 sol c i: 3705326.0 sol gp i: 0.0 total work: 3822838.0 wasted work: 0.
    44572226183793295
30
       i: 3.0 1_i: 7.0 p_i: 23.0 aI_i: 23.0
                                                        sol_a_i: 23.0 sol_g_i: 0.0 d_i: 32.0 sol_taoi: 23.0 sol_deltai: 32.0 sol_deltai - sol_taoi: 9.0 sol_taoP
    : 23.0 sol_deltaP: 25.0 sol_deltaP - sol_taoP: 2.0 cl_i: 2241580.0 sol_c_i: 2241580.0 sol_gp_i: 0.0 total work: 2636440.0 wasted work: 1.
    4977014458891535
       i: 4.0 1_i: 4.0 p_i: 26.0 aI i: 57.0
                                                       sol_a_i: 57.0 sol_g_i: 0.0 d_i: 79.0 sol_taoi: 57.0 sol_deltai: 79.0 sol_deltai - sol_taoi: 22.0 sol_taoP
31
    : 57.0 sol_deltaP: 62.0 sol_deltaP - sol_taoP: 5.0 cl_i: 5621271.0 sol_c_i: 5621271.0 sol_gp_i: 0.0 total work: 5800168.0 wasted work: 0.
    6785551728846475
      i: 5.0 1_i: 6.0 p_i: 8.0 aI i: 10.0
                                                   sol a i: 10.0 sol g i: 0.0 d i: 21.0 sol taoi: 10.0 sol deltai: 21.0 sol deltai - sol taoi: 11.0 sol taoP:
32
    10.0 sol_deltaP: 14.0 sol_deltaP - sol_taoP: 4.0 cl_i: 2745429.0 sol_c_i: 2745429.0 sol_gp_i: 0.0 total work: 2768262.0 wasted work: 0.
    0866054224636252
       i: 6.0 1_i: 5.0 p_i: 25.0 aI_i: 33.0
                                                        sol a i: 33.0 sol g i: 0.0 d i: 49.0 sol taoi: 33.0 sol deltai: 49.0 sol deltai - sol taoi: 16.0 sol taoP
     33.0 sol_deltaP: 38.0 sol_deltaP - sol_taoP: 5.0 cl_i: 4038170.0 sol_c_i: 4038170.0 sol_gp_i: 0.0 total work: 4218304.0 wasted work: 0.
    6832471059458968
      i: 7.0 1_i: 6.0 p_i: 8.0 aI_i: 55.0
                                                    sol_a_i: 55.0 sol_g_i: 0.0 d_i: 73.0 sol_taoi: 55.0 sol_deltai: 73.0 sol_deltai - sol_taoi: 18.0 sol_taoP:
34
            sol_deltaP: 58.0 sol_deltaP - sol_taoP: 3.0 cl_i: 4620122.0 sol_c_i: 4620122.0 sol_gp_i: 0.0 total work: 4745592.0 wasted work: 0.
    4759069047655171
35
       i: 8.0 1_i: 5.0 p_i: 18.0 aI_i: 58.0
                                                        sol deltai - sol taoi: 13.0 sol taoP: 62.0 sol deltaP: 66.0 sol deltaP - sol taoP: 4.0 cl i: 3243346.0 sol c i: 3427372.0 sol gp i: 0.
    11633490616133878 total work: 3691016.0 wasted work: 1.0
                                                       sol_a_i: 65.0 sol_g_i: 0.375 d_i: 83.0 sol_taoi: 65.0 sol_deltai: 88.0 sol_deltai - sol_taoi: 23.0
36
       i: 9.0 1_i: 4.0 p_i: 14.0 aI_i: 62.0
    sol_taoP: 65.0 sol_deltaP: 70.0 sol_deltaP - sol_taoP: 5.0 cl_i: 5908218.0 sol_c_i: 6591100.0 sol_gp_i: 0.6475417608593403 total work:
    6591100.0 wasted work: 0.0
       sol_a_i: 24.0 sol_g_i: 0.0 d_i: 45.0 sol_taoi: 24.0 sol_deltai: 35.0 sol_deltai - sol_taoi: 11.0 sol_taoP
      24.0 sol deltaP: 26.0 sol deltaP - sol taoP: 2.0 cl i: 2782021.0 sol c i: 3410721.7857142864 sol gp i: 0.5961645113432191 total work:
    3954660.0 wasted work: 2.06315415592888
38
       sol_a_i: 39.0 sol_g_i: 0.7142857142857143 d_i: 43.0 sol_taoi: 39.0 sol_deltai: 47.0 sol_deltai -
    sol_taoi: 8.0 sol_taoP: 39.0 sol_deltaP: 42.0 sol_deltaP - sol_taoP: 3.0 cl_i: 1958731.0 sol_e_i: 2240974.0 sol_gp_i: 0.15293512680519403
    total work: 2636440.0 wasted work: 1.5
                 1 i: 4.0 p i: 30.0 aI i: 12.0
                                                          sol_a_i: 18.0 sol_g_i: 0.8571428571428571 d_i: 42.0 sol_taoi: 18.0 sol_deltai: 41.0 sol_deltai -
       i: 12.0
    sol_taoi: 23.0 sol_taoP: 18.0 sol_deltaP: 23.0 sol_deltaP - sol_taoP: 5.0 cl_i: 5829348.0 sol_c_i: 6327456.0 sol_gp_i: 0.9446602236349017
    total work: 6591100.0 wasted work: 1.0
40
                                                           sol_a_i: 32.0 sol_g_i: 1.0 d_i: 45.0 sol_taoi: 32.0 sol_deltai: 51.0 sol_deltai - sol_taoi: 19.0
       sol_taoP: 32.0 sol_deltaP: 39.0 sol_deltaP - sol_taoP: 7.0 cl_i: 4889883.0 sol_c_i: 6208103.0 sol_gp_i: 1.0 total work: 6327456.0 wasted work
    : 0.4527051630228642
       sol_a_i: 33.0 sol_g_i: 0.44444444444444444444 d_i: 44.0 sol_taoi: 33.0 sol_deltai: 43.0 sol_deltai -
    sol taoi: 10.0 sol taoP: 33.0 sol deltaP: 36.0 sol deltaP - sol taoP: 3.0 cl i: 2547089.0 sol c i: 3691016.0 sol gp i: 0.5423634711960067
    total work: 3691016.0 wasted work: 0.0
    Time: 1524.000000
43
44
45
46
```