```
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=33064
  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.....
      Optimize the ./R 12 2.xlsx instance by CCG
13
14
15
               Master protblem status = 2, is Optimal and MP obj = 605.0
16
      The initial lb = -inf
                                               ub = inf
17
18
      The current iteration cnt = 0
19
                The SP model was solved Optimal 2 and SPObj = 605.0
20
               Master protblem status = 2, is Optimal
21
               Deterministic Sub problem Status= 2, is Optimal
22
               1b = 1089.0
                                                             ub = 1089.0
23
                MPObj = 1089.0
                                                      MP delete Hua Obj = 629.0
                                                                                                                Hua = 460.0
                                                                                                                                              SPObj = 605.0
                                                                                                                                                                               Deter SP Obj = 460.0
24
      ub - 1b = 0.0
25
26
27 Iteration cycle stopped by termination criterion 1: Because ub - lb \leq eps, the iteration stop, and cnt = 0
       i: 0.0 1_i: 5.0 p_i: 29.0 aI_i: 38.0 sol_a_i: 38.0 sol_g_i: 0.0 d_i: 63.0 sol_taoi: 38.0 sol_deltai: 63.0 sol_deltai - sol_taoi: 25.0 sol_taoP: 38.0 sol_deltaP - sol_taoP: 8.0 cI_i: 6559322.0 sol_c_i: 6559322.0 sol_gp_i: 0.0 total work: 6591100.0 wasted work: 0.
       1205337500568949
29
          i: 1.0 1 i: 5.0 p i: 9.0 aI i: 53.0
                                                                                  sol a i: 53.0 sol g i: 0.0 d i: 73.0 sol taoi: 53.0 sol deltai: 73.0 sol deltai - sol taoi: 20.0 sol taoP:
                   sol_deltaP: 57.0 sol_deltaP - sol_taoP: 4.0 cl_i: 5015904.0
                                                                                                                                     sol_c_i: 5015904.0 sol_gp_i: 0.0 total work: 5272880.0 wasted work: 0.
       9747083187935246
                                                                                   sol a i: 22.0 sol g i: 0.0 d i: 45.0 sol taoi: 22.0 sol deltai: 45.0 sol deltai - sol taoi: 23.0 sol taoP:
           i: 2.0 1_i: 7.0 p_i: 5.0 aI_i: 22.0
                   sol_deltaP: 27.0 sol_deltaP - sol_taoP: 5.0 cl_i: 5958045.0 sol_e_i: 5958045.0 sol_gp_i: 0.0 total work: 6195634.0 wasted work: 0.
       9011735522143497
          i: 3.0 1_i: 7.0 p_i: 22.0 aI_i: 42.0
                                                                                       sol_a_i: 42.0 sol_g_i: 0.0 d_i: 54.0 sol_taoi: 42.0 sol_deltai: 54.0 sol_deltai - sol_taoi: 12.0 sol_taoP
          42.0 sol deltaP: 45.0 sol deltaP - sol taoP: 3.0 cI i: 2994620.0 sol c i: 2994620.0 sol gp i: 0.0 total work: 3031906.0 wasted work: 0.
       14142555870795467
            i: 4.0 1_i: 7.0 p_i: 23.0 aI_i: 20.0
                                                                                        sol_a_i: 20.0 sol_g_i: 0.0 d_i: 35.0 sol_taoi: 20.0 sol_deltai: 35.0 sol_deltai - sol_taoi: 15.0 sol_taoP
          20.0 sol_deltaP: 22.0 sol_deltaP - sol_taoP: 2.0 cl_i: 3952650.0 sol_c_i: 3952650.0 sol_gp_i: 0.0 total work: 4218304.0 wasted work: 1.
       0076239171003323
                                                                                       sol\_a\_i: \ 1.0 \quad sol\_g\_i: \ 0.0 \quad d\_i: \ 26.0 \quad sol\_taoi: \ 1.0 \quad sol\_deltai: \ 26.0 \quad sol\_deltai - sol\_taoi: \ 25.0 \quad sol\_taoP: \ 1.0 \quad sol\_deltai - sol\_taoi: \ 25.0 \quad sol\_taoP: \ 1.0 \quad sol\_deltai - sol\_taoi: \ 25.0 \quad sol\_taoP: \ 1.0 \quad sol\_deltai - sol\_taoi: \ 25.0 \quad sol\_taoP: \ 1.0 \quad sol\_deltai - sol\_taoi: \ 25.0 \quad sol\_taoP: \ 1.0 \quad sol\_deltai - sol\_taoi: \ 25.0 \quad sol\_taoP: \ 1.0 \quad sol\_deltai - sol\_taoi: \ 25.0 \quad sol\_taoP: \ 1.0 \quad sol\_deltai - sol\_taoi: \ 25.0 \quad sol\_taoP: \ 1.0 \quad sol\_deltai - sol\_taoi: \ 25.0 \quad sol\_taoP: \ 1.0 \quad sol\_deltai - sol\_taoi: \ 25.0 \quad sol\_taoP: \ 1.0 \quad sol\_deltai - sol\_taoi: \ 25.0 \quad sol\_taoP: \ 1.0 \quad sol
           i: 5.0 1_i: 4.0 p_i: 30.0 aI_i: 1.0
33
                sol_deltaP: 8.0 sol_deltaP - sol_taoP: 7.0 cl_i: 6417594.0 sol_e_i: 6417594.0 sol_gp_i: 0.0 total work: 6459278.0 wasted work: 0.
       15810714448271154
           i: 6.0 l_i: 4.0 p_i: 5.0 al_i: 50.0 sol_a_i: 54.0 sol_g_i: 0.8 d_i: 61.0 sol_taoi: 54.0 sol_deltai: 63.0 sol_deltai - sol_taoi: 9.0 sol_ta - sol_taoi: 9.0 s
                                                                                sol_a_i: 54.0 sol_g_i: 0.8 d_i: 61.0 sol_taoi: 54.0 sol_deltai: 63.0 sol_deltai - sol_taoi: 9.0 sol_taoP:
34
       54.0
       wasted work: 0.0
           i: 7.0 1 i: 6.0 p i: 12.0 aI i: 8.0
                                                                                      sol a i: 9.0 sol g i: 0.12500000000000114 d i: 35.0 sol taoi: 9.0 sol deltai: 32.0 sol deltai -
35
       sol_taoi: 23.0 sol_taoP: 9.0 sol_deltaP: 13.0 sol_deltaP - sol_taoP: 4.0 cl_i: 5805311.0 sol_c_i: 6063812.0 sol_gp_i: 0.2451231585016158 total
       work: 6195634.0 wasted work: 0.5
                                                                                       sol a i: 5.0 sol g i: 0.3 d i: 33.0 sol taoi: 5.0 sol deltai: 27.0 sol deltai - sol taoi: 22.0 sol taoP: 5
          i: 8.0 1 i: 5.0 p i: 18.0 aI i: 2.0
        .0 sol deltaP: 12.0 sol deltaP - sol taoP: 7.0 cl i: 5740633.0 sol c i: 6795209.0 sol gp i: 1.0 total work: 6854744.0 wasted work: 0.
       22581587291954303
      i: 9.0 l_i: 7.0 p_i: 14.0 al_i: 64.0 sol_a_i: 71.0 sol_g_i: 1.0 d_i: 83.0 sol_taoi: 71.0 sol_deltai: 84.0 sol_deltai sol_taoi: 13.0 sol_taoi: 71.0 sol_deltaP sol_taoi: 13.0 sol_taoi: 71.0 sol_deltaP sol_taoP: 2.0 cl_i: 3327335.0 sol_c_i: 4481948.0 sol_gp_i: 0.6256342427125756 total work: 4745592.0
37
                                                                                       sol_a_i: 71.0 sol_g_i: 1.0 d_i: 83.0 sol_taoi: 71.0 sol_deltai: 84.0 sol_deltai - sol_taoi: 13.0 sol_taoP
       wasted work: 1.0
                                                                                           sol_a_i: 40.0 sol_g_i: 0.7142857142857143 d_i: 66.0 sol_taoi: 40.0 sol_deltai: 66.0 sol_deltai -
           sol taoi: 26.0 sol taoP: 40.0 sol deltaP: 50.0 sol deltaP - sol taoP: 10.0 cl i: 6634791.0 sol c i: 7033410.471428571 sol gp i: 0.
       7559805484451978 total work: 7118388.0 wasted work: 0.3223192205073081
                                                                                           sol_a_i: 42.964285714285715 sol_g_i: 0.6607142857142856 d_i: 59.0 sol_taoi: 43.0 sol_deltai: 61.0
39
            sol_deltai - sol_taoi: 18.0 sol_taoP: 43.0 sol_deltaP: 50.0 sol_deltaP - sol_taoP: 7.0 cl_i: 4633877.0 sol_c_i: 5800168.0 sol_gp_i: 0.
       8847468556083203 total work: 5800168.0 wasted work: 0.0
      Time: 2264.000000
41
42
43
44
```