```
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=6932
 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 14 5.xlsx instance by CCG
14
15
       Master protblem status = 2, is Optimal and MP obj = 773.0
16
   The initial lb = -inf
                        ub = inf
17
18
   The current iteration cnt = 0
19
        The SP model was solved Optimal 2 and SPObj = 772.0
20
       Deterministic Sub problem Status= 2, is Optimal
21
       1b = 1456.0
                              ub = 1456.0
22
        MPObj = 1456.0
                           MP_delete_Hua_Obj = 803.0
                                                        Hua = 653.0
                                                                       SPObj = 772.0
                                                                                       Deter_SP_Obj = 653.0
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: 16.0 al_i: 63.0 sol_a_i: 63.0 sol_g_i: 0.0 d_i: 83.0 sol_taoi: 63.0 sol_deltai: 85.0 sol_deltai - sol_taoi: 22.0 sol_taoP 63.0 sol_deltaP - sol_taoP: 7.0 cl_i: 5685627.0 sol_c_i: 5685627.0 sol_gp_i: 0.0 total work: 6063812.0 wasted work: 1.
27
   4344532779050538
     i: 1.0 1_i: 4.0 p_i: 16.0 aI_i: 48.0 sol_a_i: 48.0 sol_g_i: 0.0 d_i: 60.0 sol_taoi: 48.0 sol_deltai: 60.0 sol_deltai - sol_taoi: 12.0 sol_deltaP: 52.0 sol_deltaP - sol_taoP: 4.0 cI_i: 2966385.0 sol_c_i: 2966385.0 sol_gp_i: 0.0 total work: 3427372.0 wasted work: 1.
                                           sol_a_i: 48.0 sol_g_i: 0.0 d_i: 60.0 sol_taoi: 48.0 sol_deltai: 60.0 sol_deltai - sol_taoi: 12.0 sol_taoP
   7485207325029206
29
      i: 2.0 1_i: 7.0 p_i: 7.0 aI_i: 34.0
                                        sol_a_i: 34.0 sol_g_i: 0.0 d_i: 58.0 sol_taoi: 34.0 sol_deltai: 58.0 sol_deltai - sol_taoi: 24.0 sol_taoP:
   34.0 sol deltaP: 42.0 sol deltaP - sol taoP: 8.0 cl i: 6130067.0 sol c i: 6130067.0 sol gp i: 0.0 total work: 6327456.0 wasted work: 0.
   7486952102077044
30
     i: 3.0 1_i: 4.0 p_i: 27.0 aI_i: 24.0
                                            sol_a_i: 24.0 sol_g_i: 0.0 d_i: 34.0 sol_taoi: 24.0 sol_deltai: 34.0 sol_deltai - sol_taoi: 10.0 sol_taoP
   : 24.0 sol_deltaP: 26.0 sol_deltaP - sol_taoP: 2.0 cl_i: 2526126.0 sol_c_i: 2526126.0 sol_gp_i: 0.0 total work: 2636440.0 wasted work: 0.
   4184202940328625
                                           sol_a_i: 24.0 sol_g_i: 0.0 d_i: 37.0 sol_taoi: 24.0 sol_deltai: 37.0 sol_deltai - sol_taoi: 13.0 sol_taoP
31
      i: 4.0 1 i: 6.0 p i: 14.0 aI i: 24.0
   : 24.0 sol deltaP: 27.0 sol deltaP - sol taoP: 3.0 cI i: 3226521.0 sol c i: 3226521.0 sol gp i: 0.0 total work: 3427372.0 wasted work: 0.
      i: 5.0 1_i: 5.0 p_i: 20.0 aI i: 12.0
                                           sol a i: 12.0 sol g i: 0.0 d i: 24.0 sol taoi: 12.0 sol deltai: 24.0 sol deltai - sol taoi: 12.0 sol taoP
32
     12.0 sol_deltaP: 14.0 sol_deltaP - sol_taoP: 2.0 cI_i: 3071421.0
                                                                  sol_c_i: 3071421.0 sol_gp_i: 0.0 total work: 3163728.0 wasted work: 0.
   35011985859719924
      i: 6.0 1_i: 7.0 p_i: 5.0 aI_i: 59.0
                                         sol a i: 59.0 sol g i: 0.0 d i: 68.0 sol taoi: 59.0 sol deltai: 68.0 sol deltai - sol taoi: 9.0 sol taoP:
   59.0 sol_deltaP : 61.0 sol_deltaP - sol_taoP: 2.0 cl_i: 2270212.0 sol_c_i: 2270212.0 sol_gp_i: 0.0 total work: 2372796.0 wasted work: 0.
   38910045364203244
     i: 7.0 1_i: 4.0 p_i: 12.0 aI_i: 64.0
                                           sol_a_i: 66.0 sol_g_i: 0.4 d_i: 78.0 sol_taoi: 66.0 sol_deltai: 77.0 sol_deltai - sol_taoi: 11.0 sol_taoP
34
   : 66.0 sol_deltaP: 70.0 sol_deltaP - sol_taoP: 4.0 cl_i: 2842416.0 sol_c_i: 2900084.0 sol_gp_i: 0.03645572565024535 total work: 3031906.0
   wasted work: 0.5
      i: 8.0 1 i: 7.0 p i: 27.0 aI i: 55.0
                                            sol_a_i: 58.0 sol_g_i: 0.37499999999999 d_i: 77.0 sol_taoi: 58.0 sol_deltai: 73.0 sol_deltai -
   sol taoi: 15.0 sol taoP: 58.0 sol deltaP: 62.0 sol deltaP - sol taoP: 4.0 cl i: 3884867.0 sol c i: 4349428.7952381 sol gp i: 0.
   44051997697472745 total work: 4481948.0 wasted work: 0.5026444931874042
                                        sol_a_i: 24.0 sol_g_i: 0.7 d_i: 41.0 sol_taoi: 24.0 sol_deltai: 43.0 sol_deltai - sol_taoi: 19.0 sol_taoP:
36
      i: 9.0 1_i: 6.0 p_i: 0.0 aI_i: 17.0
   24.0 sol_deltaP: 32.0 sol_deltaP - sol_taoP: 8.0 cI_i: 4769143.0
                                                                  sol_c_i: 5800168.0 sol_gp_i: 0.9776678020360787 total work: 5800168.0
   wasted work: 0.0
                                             sol_a_i: 53.0 sol_g_i: 0.7142857142857143 d_i: 72.0 sol_taoi: 53.0 sol_deltai: 72.0 sol_deltai -
      sol taoi: 19.0 sol taoP: 53.0 sol deltaP: 57.0 sol deltaP - sol taoP: 4.0 cl i: 4803133.0
                                                                                       sol c i: 5536524.0 sol gp i: 0.3973924794690675
   total work: 6195634.0 wasted work: 2.5
                                              sol\_a\_i: \ 35.786111111111104 \ sol\_g\_i: \ 0.2551587301587296 \ d\_i: \ 49.0 \ sol\_taoi: \ 36.0 \ sol\_deltai: \ 45.0
38
      i: 11.0    1_i: 6.0    p_i: 27.0    aI_i: 34.0
      sol_deltai - sol_taoi: 9.0 sol_taoP: 36.0 sol_deltaP: 39.0 sol_deltaP - sol_taoP: 3.0 cl_i: 2293605.0 sol_c_i: 2820893.0 sol_gp_i: 1.0 total
   work: 3031906.0 wasted work: 0.8003709547723445
     i: 12.0 1 i: 5.0 p i: 0.0 aI i: 61.0
                                           sol taoi: 10.0 sol taoP: 65.0 sol deltaP: 68.0 sol deltaP - sol taoP: 3.0 cI i: 2467068.0 sol c i: 2900084.0 sol gp i: 0.32848538180273423
   total work: 2900084.0 wasted work: 0.0
     sol_a_i: 27.0 sol_g_i: 0.88888888888888888 d_i: 49.0 sol_taoi: 27.0 sol_deltai: 52.0 sol_deltai -
   sol_taoi: 25.0 sol_taoP: 27.0 sol_deltaP: 33.0 sol_deltaP - sol_taoP: 6.0 cl_i: 6576381.0 sol_c_i: 8304786.0 sol_gp_i: 0.8194786340671514
   total work: 8436608.0 wasted work: 0.5
   Time: 1557.000000
42
43
44
45
```