```
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=24629
 2
 3
    import sys; print('Python %s on %s' % (sys.version, sys.platform))
     sys.path.extend(['E:\\1\ ]==-\\3\ python\_code\) Code for this
     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
    python code/9 Code for this paper')
10 Backend TkAgg is interactive backend. Turning interactive mode on.
11
     Waiting 5s.....
    Optimize the ./R 11 4.xlsx instance by ECCG
13
14
15
           Master protblem status = 2, is Optimal and MP obj = 444.0
16
     The initial lb = -inf
                                   ub = inf
17
18
     The current iteration cnt = 0
19
           The SP model was solved Optimal 2 and SPObj = 444.0
20
           Deterministic Sub problem Status= 2, is Optimal
21
           Master protblem status = 2, is Optimal
22
           1b = 806.0
                                        ub = 806.0
23
            MPObj = 806.0
                                 MP delete Hua Obj = 464.0
                                                                               Hua = 342.0
                                                                                                     SPObj = 444.0
                                                                                                                             Deter SP Obj = 342.0
24
     ub - 1b = 0.0
25
26
27
    Iteration cycle stopped by termination criterion 1: Because ub - lb \le eps, the iteration stop, and cnt = 0
         i: 0.0 1_i: 5.0 p_i: 3.0 al_i: 1.0 sol_a_i: 1.0 sol_g_i: 0.0 d_i: 18.0 sol_taoi: 1.0 sol_deltai: 15.0 sol_deltai - sol_taoi: 14.0 sol_taoP: 1.0
28
         sol_deltaP: 5.0 sol_deltaP - sol_taoP: 4.0 cl_i: 3484006.0 sol_e i: 3484006.0 sol_gp_i: 0.0 total work: 3691016.0 wasted work: 0.
     7851876014625784
29
       i: 1.0 1_i: 5.0 p_i: 22.0 aI_i: 3.0
                                                                sol\_a\_i: \ 3.0 \quad sol\_g\_i: \ 0.0 \quad d\_i: \ 39.0 \quad sol\_taoi: \ 3.0 \quad sol\_deltai: \ 35.0 \quad sol\_deltai - sol\_taoi: \ 32.0 \quad sol\_taoP: \ 3.0 \quad sol\_deltai - sol\_taoi: \ 32.0 \quad sol\_taoP: \ 3.0 \quad sol\_deltai - sol\_taoi: \ 32.0 \quad sol\_taoP: \ 3.0 \quad sol\_deltai - sol\_taoi: \ 32.0 \quad sol\_taoP: \ 3.0 \quad sol\_deltai - sol\_taoi: \ 32.0 \quad sol\_taoP: \ 3.0 \quad sol\_deltai - sol\_taoi: \ 32.0 \quad sol\_taoP: \ 3.0 \quad sol\_deltai - sol\_taoi: \ 32.0 \quad sol\_taoP: \ 3.0 \quad sol\_deltai - sol\_taoi: \ 32.0 \quad sol\_taoP: \ 3.0 \quad sol\_deltai - sol\_taoi: \ 32.0 \quad sol\_taoP: \ 3.0 \quad sol\_taoP: \ 3.0 \quad sol\_deltai - sol\_taoi: \ 32.0 \quad sol\_taoP: \ 3.0 \quad
           sol_deltaP: 9.0 sol_deltaP - sol_taoP: 6.0 cl_i: 8397469.0 sol_c_i: 8397469.0 sol_gp_i: 0.0 total work: 8568430.0 wasted work: 0.
     6484539758158729
                                                            sol a i: 13.0 sol g i: 0.0 d i: 45.0 sol taoi: 13.0 sol deltai: 47.0 sol deltai - sol taoi: 34.0 sol taoP:
        i: 2.0 1 i: 6.0 p i: 8.0 aI i: 13.0
              sol_deltaP: 19.0 sol_deltaP - sol_taoP: 6.0 cl_i: 8838503.0 sol_c_i: 8838503.0 sol_gp_i: 0.0 total work: 9491184.0 wasted work: 2.
     13.0
     4756148442596837
       i: 3.0 1_i: 5.0 p_i: 2.0 aI_i: 24.0
                                                            sol_a_i: 24.0 sol_g_i: 0.0 d_i: 33.0 sol_taoi: 24.0 sol_deltai: 29.0 sol_deltai - sol_taoi: 5.0 sol_taoP:
              sol deltaP: 26.0 sol deltaP - sol taoP: 2.0 cI i: 1243727.0 sol c i: 1243727.0 sol gp i: 0.0 total work: 1845508.0 wasted work: 2.
     282551470922911
         i: 4.0 1_i: 5.0 p_i: 14.0 aI_i: 26.0
                                                                sol_a_i: 26.0 sol_g_i: 0.0 d_i: 30.0 sol_taoi: 26.0 sol_deltai: 33.0 sol_deltai - sol_taoi: 7.0 sol_taoP
       26.0 sol_deltaP: 28.0 sol_deltaP - sol_taoP: 2.0 cl_i: 1803254.0 sol_c_i: 1803254.0 sol_gp_i: 0.0 total work: 1977330.0 wasted work: 0.
     6602691508245968
                                                                sol_a_i: 28.0 sol_g_i: 0.0 d_i: 35.0 sol_taoi: 28.0 sol_deltai: 37.0 sol_deltai - sol_taoi: 9.0 sol_taoP
33
         i: 5.0 l_i: 7.0 p_i: 27.0 al_i: 28.0
       28.0 sol_deltaP: 30.0 sol_deltaP - sol_taoP: 2.0 cI_i: 2194062.0 sol_c_i: 2194062.0 sol_gp_i: 0.0 total work: 2240974.0 wasted work: 0.
     17793691493073993
                                                                sol_a_i: 32.0 sol_g_i: 0.6 d_i: 45.0 sol_taoi: 32.0 sol_deltai: 45.0 sol_deltai - sol taoi: 13.0 sol taoP
         i: 6.0 1_i: 5.0 p_i: -0.0 aI_i: 29.0
34
      32.0 sol deltaP: 36.0 sol deltaP - sol taoP: 4.0 cl i: 3426326.0 sol c i: 3427372.0 sol gp i: 0.0006612452145064304 total work: 3427372.0
     wasted work: 0.0
35
        i: 7.0 1 i: 5.0 p i: 14.0 aI i: 33.0
                                                                sol_a_i: 34.0 sol_g_i: 0.1250000000000018 d_i: 44.0 sol_taoi: 34.0 sol_deltai: 42.0 sol_deltai -
     sol_taoi: 8.0 sol_taoP: 34.0 sol_deltaP: 39.0 sol_deltaP - sol_taoP: 5.0 cI_i: 2057589.0 sol_c_i: 3112165.0 sol_gp_i: 1.0 total work: 3954660.0
         wasted work: 3.195578128081807
                                                                sol a i: 52.0 sol g i: 1.0 d i: 61.0 sol taoi: 52.0 sol deltai: 68.0 sol deltai - sol taoi: 16.0 sol taoP
         i: 8.0 1_i: 5.0 p_i: 14.0 aI_i: 42.0
       52.0 sol deltaP: 56.0 sol deltaP - sol taoP: 4.0 cl i: 4171846.0 sol c i: 5014809.466666667 sol gp i: 0.7993387547854933 total work:
     5272880.0 wasted work: 0.9788598767024215
         i: 9.0 1_i: 5.0 p_i: 9.0 aI_i: 46.0
                                                            sol_a_i: 49.0 sol_g_i: 0.42857142857142855 d_i: 54.0 sol_taoi: 49.0 sol_deltai: 54.0 sol_deltai -
     sol_taoi: 5.0 sol_taoP: 49.0 sol_deltaP: 51.0 sol_deltaP - sol_taoP: 2.0 cl_i: 1080677.0 sol_c_i: 2109152.0 sol_gp_i: 0.5572855820727951
     total work: 2240974.0 wasted work: 0.5
                                                                   38
         sol deltai - sol taoi: 20.0 sol taoP: 39.0 sol deltaP: 43.0 sol deltaP - sol taoP: 4.0 cI i: 5219621.0 sol c i: 5558516.6 sol gp i: 0.
     6427144179272055 total work: 5800168.0 wasted work: 0.9165822093429032
39
    Time: 50.000000
40
41
42
43
```