```
1  "E:\1 □□□□\3 □□□□□\1 □□□□□□\1 □□□□□□□□\1_□□□□□□_□□□□\1_LW _□□□□\4 □□□□\3 python_code\1 exzample\2 □□□□□□\9 Code for
   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=31535
2
3  import sys; print('Python %s on %s' % (sys.version, sys.platform))
4  sys.path.extend(['E:\\1 □□□□\\3 □□□□□\\1 □□□□□□\\1 □□□□□□□□\\1_□□□□□□_□□□□\\1_LW _□□□□\\4 □□□□\\3 python_code\\9 Code for this
   paper', 'E:/1 □□□□/3 □□□□□/1 □□□□□□/1 □□□□□□□□/1_□□□□□□_□□□□/1_LW _□□□□/4 □□□□/3 python_code/9 Code for this paper'])
5
6  PyDev console: starting.
7
8  Python 3.9.7 (tags/v3.9.7:1016ef3, Aug 30 2021, 20:19:38) [MSC v.1929 64 bit (AMD64)] on win32
9  >>> runfile('E:/1 □□□□/3 □□□□□/1 □□□□□□/1 □□□□□□□□/1_□□□□□□_□□□□/1_LW _□□□□/4 □□□□/3 python_code/9 Code for this paper/
   main_RO_CCG.py', wdir='E:/1 □□□□/3 □□□□□/1 □□□□□□/1 □□□□□□□□/1_□□□□□□_□□□□/1_LW _□□□□/4 □□□□/3 python_code/9 Code for
   this paper')
10 Backend TkAgg is interactive backend. Turning interactive mode on.
11 Waiting 5s......
12
13 Optimize the  ./R_6_1.xlsx  instance by CCG
14
15      Master protblem status =  2 , is Optimal and MP obj =  203.0
16 The initial lb =  -inf       ub =  inf
17
18 The current iteration cnt =  0
19      The SP model was solved Optimal 2 and SPObj =  203.0
20      Master protblem status =  2 , is Optimal
21      Deterministic Sub problem Status=  2 , is Optimal
22      lb =  333.0              ub =  333.0
23       MPObj =  333.0    MP_delete_Hua_Obj =  212.0      Hua =  121.0      SPObj =  203.0      Deter_SP_Obj =  121.0
24
25 ub - lb =  0.0
26
27 Iteration cycle stopped by termination criterion 1: Because ub - lb <= eps, the iteration stop, and cnt =  0
28    i:  0.0  l_i:  5.0   p_i:  18.0   al_i:  2.0      sol_a_i:  2.0   sol_g_i:  0.0   d_i:  11.0   sol_taoi:  2.0   sol_deltai:  11.0  sol_deltai - sol_taoi:  9.0    sol_taoP:  2
   .0   sol_deltaP:  4.0   sol_deltaP - sol_taoP:  2.0  cl_i:  2292581.0     sol_c_i:  2292581.0   sol_gp_i:  0.0  total work:  2636440.0   wasted work:  1.
   3042549802005734
29    i:  1.0  l_i:  6.0   p_i:  23.0   al_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_deltai - sol_taoi:  20.0  sol_taoP:  7
   .0   sol_deltaP:  11.0   sol_deltaP - sol_taoP:  4.0  cl_i:  5270879.0     sol_c_i:  5270879.0   sol_gp_i:  0.0  total work:  5272880.0   wasted work:  0.
   0075897980158091973
30    i:  2.0  l_i:  7.0   p_i:  6.0   al_i:  2.0      sol_a_i:  2.0   sol_g_i:  0.0   d_i:  15.0   sol_taoi:  2.0   sol_deltai:  15.0  sol_deltai - sol_taoi:  13.0  sol_taoP:  2.0
   sol_deltaP:  6.0   sol_deltaP - sol_taoP:  4.0  cl_i:  3408100.0     sol_c_i:  3408100.0   sol_gp_i:  0.0  total work:  3427372.0   wasted work:  0.
   07309857231721564
31    i:  3.0  l_i:  4.0   p_i:  19.0   al_i:  22.0      sol_a_i:  22.0  sol_g_i:  0.0   d_i:  50.0   sol_taoi:  22.0   sol_deltai:  50.0  sol_deltai - sol_taoi:  28.0  sol_taoP
   :  22.0  sol_deltaP:  27.0    sol_deltaP - sol_taoP:  5.0  cl_i:  7366651.0     sol_c_i:  7366651.0   sol_gp_i:  0.0  total work:  7382032.0   wasted work:  0.
   05834003428866198
32    i:  4.0  l_i:  5.0   p_i:  14.0   al_i:  23.0      sol_a_i:  24.0  sol_g_i:  0.2   d_i:  62.0   sol_taoi:  24.0    sol_deltai:  43.0  sol_deltai - sol_taoi:  19.0  sol_taoP
   :  24.0  sol_deltaP:  29.0    sol_deltaP - sol_taoP:  5.0  cl_i:  4857867.0     sol_c_i:  5536523.800000001    sol_gp_i:  0.4290234811589375    total work:
   5536524.0   wasted work:  7.585987136249713e-07
33    i:  5.0  l_i:  6.0   p_i:  8.0   al_i:  30.0      sol_a_i:  38.0  sol_g_i:  1.0   d_i:  70.0   sol_taoi:  38.0    sol_deltai:  66.0  sol_deltai - sol_taoi:  28.0  sol_taoP:
   38.0   sol_deltaP:  44.0    sol_deltaP - sol_taoP:  6.0  cl_i:  7318466.0     sol_c_i:  7928256.0   sol_gp_i:  0.7709765188410624    total work:  8304786.0
   wasted work:  1.428175873526422
34 Time: 27.000000
35
36
37
38
```