```
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=31613
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_7_1.xlsx instance by CCG
14
15     Master protblem status = 2 , is Optimal and MP obj = 240.0
16 The initial lb = -inf     ub = inf
17
18 The current iteration cnt = 0
19     The SP model was solved Optimal 2 and SPObj = 240.0
20     Master protblem status = 2 , is Optimal
21     Deterministic Sub problem Status= 2 , is Optimal
22     lb = 407.0              ub = 407.0
23     MPObj = 407.0    MP_delete_Hua_Obj = 254.0      Hua = 153.0      SPObj = 240.0      Deter_SP_Obj = 153.0
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: 7.0  p_i: 0.0  al_i: 5.0      sol_a_i: 5.0  sol_g_i: 0.0  d_i: 31.0  sol_taoi: 5.0  sol_deltai: 29.0 sol_deltai - sol_taoi: 24.0  sol_taoP: 5.0
   sol_deltaP: 11.0    sol_deltaP - sol_taoP: 6.0  cI_i: 6150034.0    sol_c_i: 6150034.0  sol_gp_i: 0.0 total work: 6327456.0   wasted work: 0.
   6729605073508216
29     i: 1.0  l_i: 6.0  p_i: 21.0  al_i: 13.0      sol_a_i: 13.0 sol_g_i: 0.0  d_i: 21.0  sol_taoi: 13.0    sol_deltai: 19.0 sol_deltai - sol_taoi: 6.0  sol_taoP
   : 13.0  sol_deltaP: 14.0    sol_deltaP - sol_taoP: 1.0 cI_i: 1431098.0    sol_c_i: 1431098.0  sol_gp_i: 0.0 total work: 1450042.0   wasted work: 0.
   07185447042223604
30     i: 2.0  l_i: 7.0  p_i: 7.0  al_i: 18.0      sol_a_i: 18.0 sol_g_i: 0.0  d_i: 45.0  sol_taoi: 18.0    sol_deltai: 43.0 sol_deltai - sol_taoi: 25.0  sol_taoP:
   18.0    sol_deltaP: 23.0    sol_deltaP - sol_taoP: 5.0  cI_i: 6471276.0    sol_c_i: 6471276.0  sol_gp_i: 0.0 total work: 6854744.0   wasted work: 1.
   4544916630001061
31     i: 3.0  l_i: 7.0  p_i: 27.0  al_i: 21.0      sol_a_i: 21.0 sol_g_i: 0.0  d_i: 37.0  sol_taoi: 21.0    sol_deltai: 35.0 sol_deltai - sol_taoi: 14.0  sol_taoP
   : 21.0  sol_deltaP: 24.0    sol_deltaP - sol_taoP: 3.0  cI_i: 3658013.0    sol_c_i: 3658013.0  sol_gp_i: 0.0 total work: 3954660.0   wasted work: 1.
   1251801671951571
32     i: 4.0  l_i: 7.0  p_i: 14.0  al_i: 4.0      sol_a_i: 5.0  sol_g_i: 0.2  d_i: 54.0  sol_taoi: 5.0  sol_deltai: 37.0 sol_deltai - sol_taoi: 32.0  sol_taoP: 5
   .0  sol_deltaP: 12.0    sol_deltaP - sol_taoP: 7.0  cI_i: 8295964.0    sol_c_i: 9255408.75  sol_gp_i: 0.7278335558556234    total work: 9359362.0
   wasted work: 0.3942940101045349
33     i: 5.0  l_i: 6.0  p_i: 21.0  al_i: 19.0      sol_a_i: 23.8  sol_g_i: 0.6  d_i: 48.0  sol_taoi: 24.0    sol_deltai: 33.0 sol_deltai - sol_taoi: 9.0  sol_taoP
   : 24.0  sol_deltaP: 26.0    sol_deltaP - sol_taoP: 2.0  cI_i: 2220586.0    sol_c_i: 2372796.0  sol_gp_i: 0.07216644414437667 total work: 2768262.0
   wasted work: 1.5
34     i: 6.0  l_i: 7.0  p_i: 14.0  al_i: 28.0      sol_a_i: 38.0 sol_g_i: 1.0  d_i: 71.0  sol_taoi: 38.0    sol_deltai: 58.0 sol_deltai - sol_taoi: 20.0  sol_taoP
   : 38.0  sol_deltaP: 43.0    sol_deltaP - sol_taoP: 5.0  cI_i: 5118839.0    sol_c_i: 7755279.0  sol_gp_i: 1.0 total work: 7777498.0   wasted work: 0.
   08427652440412071
35 Time: 47.000000
36
37
38
39
```