```
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=25469
 3
    import sys; print('Python %s on %s' % (sys.version, sys.platform))
     sys.path.extend(['E:\\1 ] _ _ \\3 | 0 _ _ | \\1 | 0 | 0 | 0 | \\1 | 0 | 0 | 0 | \\1 | 0 | 0 | 0 | \\1 | 0 | 0 | 0 | \\1 | 0 | 0 | 0 | \\1 | 0 | 0 | 0 | \\1 | 0 | 0 | \\1 | 0 | 0 | \\1 | 0 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\1 | 0 | \\\  | 0 | \\1 | 0 | \\\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | \\  | 0 | 
     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 18 2.xlsx instance by CCG
14
            Master protblem status = 2, is Optimal and MP obj = 942.0
15
16
     The initial lb = -inf
                                      ub = inf
17
18
     The current iteration cnt = 0
             The SP model was solved Optimal 2 and SPObj = 939.0
19
            Deterministic Sub problem Status= 2, is Optimal
20
            1b = 1756.0
                                                ub = 1756.0
21
22
             MPObj = 1756.0
                                           MP_delete_Hua_Obj = 973.0
                                                                                          Hua = 783.0
                                                                                                                  SPObj = 939.0
                                                                                                                                            Deter_SP_Obj = 783.0
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 l_i: 5.0 p_i: 20.0 al_i: 40.0 sol_a_i: 40.0 sol_g_i: 0.0 d_i: 46.0 sol_taoi: 40.0 sol_deltai: 48.0 sol_deltai: 48.0 sol_deltai: 48.0 sol_deltai: 8.0 sol_taoi: 8.0 sol_taoP 40.0 sol_deltai: 42.0 sol_delta
27
      8360781963556918
                                                                     sol_a_i: 10.0 sol_g_i: 0.0 d_i: 25.0 sol_taoi: 10.0 sol_deltai: 29.0 sol_deltai - sol_taoi: 19.0 sol_taoP
         i: 1.0 1_i: 7.0 p_i: 12.0 aI_i: 10.0
        10.0 sol_deltaP: 16.0 sol_deltaP - sol_taoP: 6.0 cI_i: 4978701.0 sol_c_i: 4978701.0 sol_gp_i: 0.0 total work: 5009236.0 wasted work: 0.
     11581905903415211
         i: 2.0 1_i: 6.0 p_i: 28.0 aI_i: 61.0
                                                                      sol_a_i: 61.0 sol_g_i: 0.0 d_i: 69.0 sol_taoi: 61.0 sol_deltai: 71.0 sol_deltai - sol_taoi: 10.0 sol_taoP
        61.0 sol deltaP: 63.0 sol deltaP - sol taoP: 2.0 cl i: 2609475.0 sol c i: 2609475.0 sol gp i: 0.0 total work: 2636440.0 wasted work: 0.
      10227807194550227
30
         i: 3.0 1_i: 7.0 p_i: 16.0 aI_i: 68.0
                                                                      sol_a_i: 68.0 sol_g_i: 0.0 d_i: 78.0 sol_taoi: 68.0 sol_deltai: 81.0 sol_deltai - sol_taoi: 13.0 sol_taoP
        68.0 sol_deltaP: 71.0 sol_deltaP - sol_taoP: 3.0 cI_i: 3252602.0 sol_c_i: 3252602.0 sol_gp_i: 0.0 total work: 3295550.0 wasted work: 0.
      16290148837068166
         i: \ 4.0 \ 1\_i: \ 7.0 \ p\_i: \ 5.0 \ aI\_i: \ 8.0
                                                                   sol_a_i: 8.0 sol_g_i: 0.0 d_i: 25.0 sol_taoi: 8.0 sol_deltai: 30.0 sol_deltai - sol_taoi: 22.0 sol_taoP: 8.0
31
         sol deltaP: 13.0 sol deltaP - sol taoP: 5.0 cl i: 5706853.0 sol c i: 5706853.0 sol gp i: 0.0 total work: 5800168.0 wasted work: 0.
     35394319612811215
                                                                     sol_a_i: 52.0 sol_g_i: 0.0 d_i: 60.0 sol_taoi: 52.0 sol_deltai: 62.0 sol_deltai - sol_taoi: 10.0 sol_taoP
32
         i: 5.0 1 i: 4.0 p i: 11.0 aI i: 52.0
        52.0 sol_deltaP: 54.0 sol_deltaP - sol_taoP: 2.0 cI_i: 2467067.0
                                                                                                          sol_c_i: 2467067.0 sol_gp_i: 0.0 total work: 2636440.0 wasted work: 0.
     6424307020072522
         i: 6.0 1_i: 6.0 p_i: 15.0 aI_i: 55.0
                                                                      sol a i: 55.0 sol g i: 0.0 d i: 64.0 sol taoi: 55.0 sol deltai: 67.0 sol deltai - sol taoi: 12.0 sol taoP
        55.0 sol_deltaP: 55.0 sol_deltaP - sol_taoP: 4.0 cI_i: 2907714.0 sol_c_i: 2907714.0 sol_gp_i: 0.0 total work: 3163728.0 wasted work: 0.
      9710594589673954
                                                                      sol_a_i: 55.0 sol_g_i: 0.0 d_i: 63.0 sol_taoi: 55.0 sol_deltai: 66.0 sol_deltai - sol_taoi: 11.0 sol_taoP
34
        i: 7.0 1_i: 7.0 p_i: 21.0 aI_i: 55.0
        55.0 sol_deltaP: 57.0 sol_deltaP - sol_taoP: 2.0 cl_i: 2846771.0 sol_c_i: 2846771.0 sol_gp_i: 0.0 total work: 2900084.0 wasted work: 0.
     2022158668507533
         i: 8.0 1_i: 4.0 p_i: 30.0 aI_i: 14.0
                                                                      sol_a_i: 14.0 sol_g_i: 0.0 d_i: 23.0 sol_taoi: 14.0 sol_deltai: 26.0 sol_deltai - sol_taoi: 12.0 sol_taoP
        14.0 sol deltaP: 18.0 sol deltaP - sol taoP: 4.0 cl i: 3076476.0 sol c i: 3076476.0 sol gp i: 0.0 total work: 3295550.0 wasted work: 0.
     8309462760389009
                                                                   sol_a_i: 20.0 sol_g_i: 0.0 d_i: 32.0 sol_taoi: 20.0 sol_deltai: 35.0 sol_deltai - sol_taoi: 15.0 sol_taoP
36
         i: 9.0 1_i: 6.0 p_i: 19.0 aI_i: 20.0
        20.0 sol_deltaP: 23.0 sol_deltaP - sol_taoP: 3.0 cl_i: 3763537.0 sol_c_i: 3763537.0 sol_gp_i: 0.0 total work: 3822838.0 wasted work: 0.
     22492831242129538
         sol_a_i: 61.0 sol_g_i: 0.0 d_i: 81.0 sol_taoi: 67.0 sol_deltai: 93.0 sol_deltai - sol_taoi: 26.0
      sol_taoP: 67.0 sol_deltaP: 75.0 sol_deltaP - sol_taoP: 8.0 cl_i: 6682708.0 sol_c_i: 6682708.0 sol_gp_i: 0.0 total work: 6854744.0 wasted work
      : 0.6525314439167968
                                                                         sol_a_i: 6.0 sol_g_i: 0.6 d_i: 16.0 sol_taoi: 6.0 sol_deltai: 19.0 sol_deltai - sol_taoi: 13.0 sol taoP
38
         i: 11.0    1_i: 5.0    p_i: 19.0    aI_i: 3.0
      : 6.0 sol_deltaP: 9.0 sol_deltaP - sol_taoP: 3.0 cl_i: 3300620.0 sol_c i: 3427372.0 sol_gp_i: 0.12019238063449196 total work: 3559194.0
      wasted work: 0.5
         i: 12.0 1_i: 6.0 p_i: 24.0 aI_i: 5.0
                                                                        sol_a_i: 5.0 sol_g_i: 0.0 d_i: 16.0 sol_taoi: 5.0 sol_deltai: 15.0 sol_deltai - sol_taoi: 10.0 sol_taoP
       5.0 sol_deltaP: 8.0 sol_deltaP - sol_taoP: 3.0 el_i: 2561279.0 sol_c_i: 3812051.425 sol_gp_i: 0.6777388258409067 total work: 3822838.0
      wasted work: 0.04091340974951141
                                                                      sol_a_i: 76.0 sol_g_i: 1.0 d_i: 80.0 sol_taoi: 76.0 sol_deltai: 92.0 sol_deltai - sol_taoi: 16.0
         sol taoP: 76.0 sol_deltaP: 80.0 sol_deltaP - sol_taoP: 4.0 cl_i: 4198407.0 sol_c_i: 4613770.0 sol_gp_i: 0.7877345966530624 total work:
     4877414.0 wasted work: 1.0
                       1_i: 6.0 p_i: 6.0 aI_i: 31.0
                                                                      sol_a_i: 31.0 sol_g_i: 0.0 d_i: 41.0 sol_taoi: 31.0 sol_deltai: 41.0 sol_deltai - sol_taoi: 10.0 sol_taoP
      : 31.0 sol deltaP: 34.0 sol deltaP - sol taoP: 3.0 cl i: 2558189.0 sol c i: 3427372.0 sol gp i: 0.659361108161005 total work: 3427372.0
     wasted work: 0.0
                                                                      sol a i: 64.0 sol g i: 0.8571428571428571 d i: 78.0 sol taoi: 64.0 sol deltai: 82.0 sol deltai -
         i: 15.0 1 i: 7.0 p i: 8.0 aI i: 58.0
     sol_taoi: 18.0 sol_taoP: 64.0 sol_deltaP: 67.0 sol_deltaP - sol_taoP: 3.0 cl_i: 4501830.0 sol_c_i: 5009236.0 sol_gp_i: 0.24057346269970112
     total work: 5009236.0 wasted work: 0.0
         sol_a_i: 26.0 sol_g_i: 1.0 d_i: 36.0 sol_taoi: 26.0 sol_deltai: 47.0 sol_deltai - sol_taoi: 21.0
      sol_taoP: 26.0 sol_deltaP: 34.0 sol_deltaP - sol_taoP: 8.0 cl_i: 5454578.0 sol_c_i: 6772798.0 sol_gp_i: 1.0 total work: 6854744.0 wasted work
      : 0.31082065209145665
                                                                      sol a i: 53.885714285714286 sol g i: 0.5428571428571428 d i: 66.0 sol taoi: 54.0 sol deltai: 69.0
         i: 17.0    1_i: 5.0    p_i: 3.0    aI_i: 49.0
      sol_deltai - sol_taoi: 15.0 sol_taoP: 54.0 sol_deltaP: 60.0 sol_deltaP - sol_taoP: 6.0 cl_i: 3792467.0 sol_c_i: 4877414.0 sol_gp_i: 0.
      5143996260108328
                                  total work: 5009236.0 wasted work: 0.5
```

unknown

45	Time: 1499.000000
46	Time: 1499.000000
47	
48	
49	
1	
1	