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=55082

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_BDC.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_5_1.xlsx instance by BDC

14

15   Master protblem status = 2 , is Optimal

16   sol_MP_obj = 192.0

17 The initial lb = -inf   ub = inf

18

19 The current iteration cnt = 0

20   Dual problem status = 2 , is Optimal

21   Add optimal cut

22   Master protblem status = 2 , is Optimal

23   Deterministic Sub problem Status= 2 , is Optimal

24   lb = 203.00588465143505   ub = 203.00588465143505

25   MPObj = 203.00588465143505   MPObj_Remove_Hua = 200.0   DualSPObj = 3.0058846514350495   Hua = 3.0058846514350495 Deterministic_SP_SPObj = 120.0

26

27 ub - lb = 0.0

28

29 Iteration cycle stopped by termination criterion 1: Because ub - lb <= eps, the iteration stop, and cnt = 0

30   i: 0.0 l_i: 6.0 p_i: 4.0 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: 12.0   sol_deltaP - sol_taoP: 5.0 cl_i: 5270879.0   sol_c_i: 5270879.0 sol_gp_i: 0.0 total work: 5272880.0 wasted work: 0.0075897800158091973

31   i: 1.0 l_i: 7.0 p_i: 10.0 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: 5.0 sol_deltaP - sol_taoP: 3.0 cl_i: 3408100.0   sol_c_i: 3408100.0 sol_gp_i: 0.0 total work: 3822838.0 wasted work: 1.5730985723172157

32   i: 2.0 l_i: 4.0 p_i: -0.0 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: 29.0 sol_deltaP - sol_taoP: 7.0 cl_i: 7366651.0   sol_c_i: 7366651.0 sol_gp_i: 0.0 total work: 7382032.0 wasted work: 0.05834003428866198

33   i: 3.0 l_i: 5.0 p_i: 10.0 al_i: 23.0   sol_a_i: 27.0 sol_g_i: 0.8 d_i: 62.0 sol_taoi: 27.0 sol_deltai: 46.0 sol_deltai - sol_taoi: 19.0 sol_taoP: 27.0 sol_deltaP: 32.0 sol_deltaP - sol_taoP: 5.0 cl_i: 4857867.0   sol_c_i: 6123358.2 sol_gp_i: 0.8 total work: 6591100.0 wasted work: 1.7741416455523351

34   i: 4.0 l_i: 6.0 p_i: 4.0 al_i: 30.0   sol_a_i: 33.2 sol_g_i: 0.4 d_i: 70.0 sol_taoi: 34.0 sol_deltai: 62.0 sol_deltai - sol_taoi: 28.0 sol_taoP: 34.0 sol_deltaP: 42.0 sol_deltaP - sol_taoP: 8.0 cl_i: 7318466.0   sol_c_i: 7634838.8 sol_gp_i: 0.4 total work: 8436608.0 wasted work: 3.041105430049613

35

36 Optimal objective = 320.0

37

38 Time: 14.000000

39

40

41

42