

unknown

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1 "E:\1_2_3_0_0_0\1_2_0_0_0\1_0_0_0_0\1_0_0_0_0_0\1_LW_0_0_0_2\6_0_0_0\2 python code\01_My_Python_Code\Scripts\python.exe" "D:\Python\Pycharm\setroute\PyCharm Community Edition 2021.2.3\plugins\python-ce\helpers\pydev\pydevconsole.py" --mode=client --port=27699
2
3 import sys; print('Python %s on %s' % (sys.version, sys.platform))
4 sys.path.extend(['E:\1_2_3_0_0\1_2_0_0\1_0_0_0_0\1_LW_0_0_0_2\6_0_0_0\2 python code\01_My_Python_Code', 'E:/1_2_3_0_0/1_2_0_0/1_0_0_0_0/1_LW_0_0_0_2/6_0_0_0/2 python code/01_My_Python_Code'])
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_2_3_0_0/1_2_0_0/1_0_0_0_0/1_LW_0_0_0_2/6_0_0_0/2 python code\01_My_Python_Code/main_BACASP_offical_PSO_2D_Bin_berth_line.py', wdir='E:/1_2_3_0_0/1_2_0_0/1_0_0_0_0/1_LW_0_0_0_2/6_0_0_0/2 python code/01_My_Python_Code')
10 Backend TkAgg is interactive backend. Turning interactive mode on.
11 Waiting 1s.....
12
13 This is the R_4_4_standerd_test.xlsx optimization process.
14
15 Start
16     Read basic data
17         V = 4
18         T = 36
19         Q = 23
20         L = 30
21 PSO parameter setting:
22     Trail = 31
23     maxIter_num = 20
24     W_inertia = 2.0
25     oder_type_num = 25
26     c1 = 1.5
27     c2 = 1.5
28     r1 = 0.2308591232095788
29     r2 = 0.2308591232095788
30 Begin iteration:
31
32 iter = 0
33     cord_individual_obj[indivial_i, :] = [0, 1, 6, 7]
34     cord_individual_obj[indivial_i, :] = [1, 1, 24, 25]
35     cord_individual_obj[indivial_i, :] = [2, 1, 30, 31]
36     cord_individual_obj[indivial_i, :] = [3, 1, 30, 31]
37     cord_individual_obj[indivial_i, :] = [4, 1, 90, 91]
38     cord_individual_obj[indivial_i, :] = [5, 2, 4, 6]
39     cord_individual_obj[indivial_i, :] = [6, 1, 30, 31]
40     cord_individual_obj[indivial_i, :] = [7, 1, 50, 51]
41     cord_individual_obj[indivial_i, :] = [8, 1, 6, 7]
42     cord_individual_obj[indivial_i, :] = [9, 1, 16, 17]
43     cord_individual_obj[indivial_i, :] = [10, 1, 30, 31]
44     cord_individual_obj[indivial_i, :] = [11, 1, 24, 25]
45     cord_individual_obj[indivial_i, :] = [12, 3, 4, 7]
46     cord_individual_obj[indivial_i, :] = [13, 1, 16, 17]
47     cord_individual_obj[indivial_i, :] = [14, 1, 16, 17]
48     cord_individual_obj[indivial_i, :] = [15, 2, 6, 8]
49     cord_individual_obj[indivial_i, :] = [16, 2, 30, 32]
50     cord_individual_obj[indivial_i, :] = [17, 3, 4, 7]
51     cord_individual_obj[indivial_i, :] = [18, 2, 40, 42]
52     cord_individual_obj[indivial_i, :] = [19, 1, 24, 25]
53     cord_individual_obj[indivial_i, :] = [20, 1, 50, 51]
54     cord_individual_obj[indivial_i, :] = [21, 3, 30, 33]
55     cord_individual_obj[indivial_i, :] = [22, 2, 38, 40]
56     cord_individual_obj[indivial_i, :] = [23, 2, 24, 26]
57     cord_individual_obj[indivial_i, :] = [24, 3, 30, 33]
58
59 min(cord_individual_obj[:, 3]) = 6.0
60 historl_G_best_iter[iter, 3] = 6.0
61 Begin iteration:
62
63 iter = 1
64     cord_individual_obj[indivial_i, :] = [0, 2, 44, 46]
65     cord_individual_obj[indivial_i, :] = [1, 2, 30, 32]
66     cord_individual_obj[indivial_i, :] = [2, 3, 4, 7]
67     cord_individual_obj[indivial_i, :] = [3, 2, 12, 14]
68     cord_individual_obj[indivial_i, :] = [4, 2, 4, 6]
69     cord_individual_obj[indivial_i, :] = [5, 3, 30, 33]
70     cord_individual_obj[indivial_i, :] = [6, 2, 30, 32]
71     cord_individual_obj[indivial_i, :] = [7, 1, 30, 31]
72     cord_individual_obj[indivial_i, :] = [8, 2, 30, 32]
73     cord_individual_obj[indivial_i, :] = [9, 2, 12, 14]
74     cord_individual_obj[indivial_i, :] = [10, 3, 16, 19]
75     cord_individual_obj[indivial_i, :] = [11, 3, 12, 15]
76     cord_individual_obj[indivial_i, :] = [12, 2, 0, 2]
77     cord_individual_obj[indivial_i, :] = [13, 1, 60, 61]
78     cord_individual_obj[indivial_i, :] = [14, 1, 30, 31]
79     cord_individual_obj[indivial_i, :] = [15, 2, 30, 32]

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80 cord_individual_obj[indivial_i, :] = [16. 1. 30. 31.]
81 cord_individual_obj[indivial_i, :] = [17. 3. 30. 33.]
82 cord_individual_obj[indivial_i, :] = [18. 3. 16. 19.]
83 cord_individual_obj[indivial_i, :] = [19. 2. 16. 18.]
84 cord_individual_obj[indivial_i, :] = [20. 2. 44. 46.]
85 cord_individual_obj[indivial_i, :] = [21. 1. 40. 41.]
86 cord_individual_obj[indivial_i, :] = [22. 2. 4. 6.]
87 cord_individual_obj[indivial_i, :] = [23. 2. 40. 42.]
88 cord_individual_obj[indivial_i, :] = [24. 3. 4. 7.]
89
90 min(cord_individual_obj[:, 3]) = 2.0
91 historl_G_best_iter[iter, 3] = 2.0
92 Begin iteration:
93
94 iter = 2
95 cord_individual_obj[indivial_i, :] = [ 0. 2. 40. 42.]
96 cord_individual_obj[indivial_i, :] = [1. 2. 0. 2.]
97 cord_individual_obj[indivial_i, :] = [ 2. 1. 30. 31.]
98 cord_individual_obj[indivial_i, :] = [ 3. 3. 40. 43.]
99 cord_individual_obj[indivial_i, :] = [ 4. 1. 52. 53.]
100 cord_individual_obj[indivial_i, :] = [ 5. 3. 4. 7.]
101 cord_individual_obj[indivial_i, :] = [ 6. 1. 42. 43.]
102 cord_individual_obj[indivial_i, :] = [ 7. 2. 4. 6.]
103 cord_individual_obj[indivial_i, :] = [ 8. 3. 16. 19.]
104 cord_individual_obj[indivial_i, :] = [ 9. 1. 40. 41.]
105 cord_individual_obj[indivial_i, :] = [10. 1. 16. 17.]
106 cord_individual_obj[indivial_i, :] = [11. 1. 16. 17.]
107 cord_individual_obj[indivial_i, :] = [12. 2. 0. 2.]
108 cord_individual_obj[indivial_i, :] = [13. 2. 0. 2.]
109 cord_individual_obj[indivial_i, :] = [14. 2. 52. 54.]
110 cord_individual_obj[indivial_i, :] = [15. 2. 58. 60.]
111 cord_individual_obj[indivial_i, :] = [16. 1. 30. 31.]
112 cord_individual_obj[indivial_i, :] = [17. 2. 0. 2.]
113 cord_individual_obj[indivial_i, :] = [18. 1. 84. 85.]
114 cord_individual_obj[indivial_i, :] = [19. 2. 16. 18.]
115 cord_individual_obj[indivial_i, :] = [20. 2. 0. 2.]
116 cord_individual_obj[indivial_i, :] = [21. 3. 4. 7.]
117 cord_individual_obj[indivial_i, :] = [22. 3. 4. 7.]
118 cord_individual_obj[indivial_i, :] = [23. 1. 30. 31.]
119 cord_individual_obj[indivial_i, :] = [24. 3. 4. 7.]
120
121 min(cord_individual_obj[:, 3]) = 2.0
122 historl_G_best_iter[iter, 3] = 2.0
123 Begin iteration:
124
125 iter = 3
126 cord_individual_obj[indivial_i, :] = [ 0. 2. 36. 38.]
127 cord_individual_obj[indivial_i, :] = [1. 2. 0. 2.]
128 cord_individual_obj[indivial_i, :] = [ 2. 3. 36. 39.]
129 cord_individual_obj[indivial_i, :] = [ 3. 3. 6. 9.]
130 cord_individual_obj[indivial_i, :] = [ 4. 1. 6. 7.]
131 cord_individual_obj[indivial_i, :] = [ 5. 3. 30. 33.]
132 cord_individual_obj[indivial_i, :] = [ 6. 2. 6. 8.]
133 cord_individual_obj[indivial_i, :] = [ 7. 2. 6. 8.]
134 cord_individual_obj[indivial_i, :] = [ 8. 3. 30. 33.]
135 cord_individual_obj[indivial_i, :] = [ 9. 2. 16. 18.]
136 cord_individual_obj[indivial_i, :] = [10. 2. 0. 2.]
137 cord_individual_obj[indivial_i, :] = [11. 3. 6. 9.]
138 cord_individual_obj[indivial_i, :] = [12. 2. 0. 2.]
139 cord_individual_obj[indivial_i, :] = [13. 2. 16. 18.]
140 cord_individual_obj[indivial_i, :] = [14. 3. 16. 19.]
141 cord_individual_obj[indivial_i, :] = [15. 2. 30. 32.]
142 cord_individual_obj[indivial_i, :] = [16. 3. 6. 9.]
143 cord_individual_obj[indivial_i, :] = [17. 2. 0. 2.]
144 cord_individual_obj[indivial_i, :] = [18. 2. 0. 2.]
145 cord_individual_obj[indivial_i, :] = [19. 2. 40. 42.]
146 cord_individual_obj[indivial_i, :] = [20. 2. 6. 8.]
147 cord_individual_obj[indivial_i, :] = [21. 2. 0. 2.]
148 cord_individual_obj[indivial_i, :] = [22. 2. 6. 8.]
149 cord_individual_obj[indivial_i, :] = [23. 1. 6. 7.]
150 cord_individual_obj[indivial_i, :] = [24. 2. 16. 18.]
151
152 min(cord_individual_obj[:, 3]) = 2.0
153 historl_G_best_iter[iter, 3] = 2.0
154 Begin iteration:
155
156 iter = 4
157 cord_individual_obj[indivial_i, :] = [0. 2. 0. 2.]
158 cord_individual_obj[indivial_i, :] = [1. 2. 6. 8.]
159 cord_individual_obj[indivial_i, :] = [ 2. 2. 30. 32.]
160 cord_individual_obj[indivial_i, :] = [ 3. 2. 0. 2.]
161 cord_individual_obj[indivial_i, :] = [ 4. 3. 16. 19.]
162 cord_individual_obj[indivial_i, :] = [ 5. 2. 110. 112.]
163 cord_individual_obj[indivial_i, :] = [ 6. 2. 16. 18.]

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164 cord_individual_obj[indivial_i,:] = [7. 2. 0. 2.]
165 cord_individual_obj[indivial_i,:] = [8. 1. 58. 59.]
166 cord_individual_obj[indivial_i,:] = [9. 1. 16. 17.]
167 cord_individual_obj[indivial_i,:] = [10. 3. 0. 3.]
168 cord_individual_obj[indivial_i,:] = [11. 1. 30. 31.]
169 cord_individual_obj[indivial_i,:] = [12. 1. 6. 7.]
170 cord_individual_obj[indivial_i,:] = [13. 2. 0. 2.]
171 cord_individual_obj[indivial_i,:] = [14. 3. 0. 3.]
172 cord_individual_obj[indivial_i,:] = [15. 2. 30. 32.]
173 cord_individual_obj[indivial_i,:] = [16. 3. 16. 19.]
174 cord_individual_obj[indivial_i,:] = [17. 1. 30. 31.]
175 cord_individual_obj[indivial_i,:] = [18. 2. 0. 2.]
176 cord_individual_obj[indivial_i,:] = [19. 2. 0. 2.]
177 cord_individual_obj[indivial_i,:] = [20. 1. 6. 7.]
178 cord_individual_obj[indivial_i,:] = [21. 1. 6. 7.]
179 cord_individual_obj[indivial_i,:] = [22. 2. 16. 18.]
180 cord_individual_obj[indivial_i,:] = [23. 1. 16. 17.]
181 cord_individual_obj[indivial_i,:] = [24. 2. 6. 8.]
182
183 min(cord_individual_obj[:,3]) = 2.0
184 historl_G_best_iter[iter,3] = 2.0
185 Begin iteration:
186
187 iter = 5
188 cord_individual_obj[indivial_i,:] = [0. 2. 6. 8.]
189 cord_individual_obj[indivial_i,:] = [1. 2. 6. 8.]
190 cord_individual_obj[indivial_i,:] = [2. 1. 36. 37.]
191 cord_individual_obj[indivial_i,:] = [3. 2. 6. 8.]
192 cord_individual_obj[indivial_i,:] = [4. 3. 0. 3.]
193 cord_individual_obj[indivial_i,:] = [5. 2. 0. 2.]
194 cord_individual_obj[indivial_i,:] = [6. 2. 6. 8.]
195 cord_individual_obj[indivial_i,:] = [7. 2. 16. 18.]
196 cord_individual_obj[indivial_i,:] = [8. 1. 6. 7.]
197 cord_individual_obj[indivial_i,:] = [9. 2. 0. 2.]
198 cord_individual_obj[indivial_i,:] = [10. 3. 0. 3.]
199 cord_individual_obj[indivial_i,:] = [11. 2. 0. 2.]
200 cord_individual_obj[indivial_i,:] = [12. 2. 0. 2.]
201 cord_individual_obj[indivial_i,:] = [13. 2. 0. 2.]
202 cord_individual_obj[indivial_i,:] = [14. 2. 0. 2.]
203 cord_individual_obj[indivial_i,:] = [15. 2. 0. 2.]
204 cord_individual_obj[indivial_i,:] = [16. 2. 0. 2.]
205 cord_individual_obj[indivial_i,:] = [17. 3. 6. 9.]
206 cord_individual_obj[indivial_i,:] = [18. 2. 0. 2.]
207 cord_individual_obj[indivial_i,:] = [19. 2. 16. 18.]
208 cord_individual_obj[indivial_i,:] = [20. 1. 30. 31.]
209 cord_individual_obj[indivial_i,:] = [21. 2. 0. 2.]
210 cord_individual_obj[indivial_i,:] = [22. 3. 0. 3.]
211 cord_individual_obj[indivial_i,:] = [23. 1. 6. 7.]
212 cord_individual_obj[indivial_i,:] = [24. 2. 0. 2.]
213
214 min(cord_individual_obj[:,3]) = 2.0
215 historl_G_best_iter[iter,3] = 2.0
216 Begin iteration:
217
218 iter = 6
219 cord_individual_obj[indivial_i,:] = [0. 2. 16. 18.]
220 cord_individual_obj[indivial_i,:] = [1. 2. 0. 2.]
221 cord_individual_obj[indivial_i,:] = [2. 2. 0. 2.]
222 cord_individual_obj[indivial_i,:] = [3. 3. 0. 3.]
223 cord_individual_obj[indivial_i,:] = [4. 1. 6. 7.]
224 cord_individual_obj[indivial_i,:] = [5. 3. 40. 43.]
225 cord_individual_obj[indivial_i,:] = [6. 2. 16. 18.]
226 cord_individual_obj[indivial_i,:] = [7. 2. 12. 14.]
227 cord_individual_obj[indivial_i,:] = [8. 2. 30. 32.]
228 cord_individual_obj[indivial_i,:] = [9. 2. 0. 2.]
229 cord_individual_obj[indivial_i,:] = [10. 3. 0. 3.]
230 cord_individual_obj[indivial_i,:] = [11. 1. 6. 7.]
231 cord_individual_obj[indivial_i,:] = [12. 2. 36. 38.]
232 cord_individual_obj[indivial_i,:] = [13. 2. 30. 32.]
233 cord_individual_obj[indivial_i,:] = [14. 3. 6. 9.]
234 cord_individual_obj[indivial_i,:] = [15. 2. 16. 18.]
235 cord_individual_obj[indivial_i,:] = [16. 3. 6. 9.]
236 cord_individual_obj[indivial_i,:] = [17. 2. 30. 32.]
237 cord_individual_obj[indivial_i,:] = [18. 2. 0. 2.]
238 cord_individual_obj[indivial_i,:] = [19. 2. 16. 18.]
239 cord_individual_obj[indivial_i,:] = [20. 1. 30. 31.]
240 cord_individual_obj[indivial_i,:] = [21. 3. 6. 9.]
241 cord_individual_obj[indivial_i,:] = [22. 2. 6. 8.]
242 cord_individual_obj[indivial_i,:] = [23. 1. 16. 17.]
243 cord_individual_obj[indivial_i,:] = [24. 2. 0. 2.]
244
245 min(cord_individual_obj[:,3]) = 2.0
246 historl_G_best_iter[iter,3] = 2.0
247 Begin iteration:

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248
249 iter = 7
250 cord_individual_obj[indivial_i, :] = [ 0. 2. 30. 32.]
251 cord_individual_obj[indivial_i, :] = [ 1. 2. 16. 18.]
252 cord_individual_obj[indivial_i, :] = [ 2. 2. 30. 32.]
253 cord_individual_obj[indivial_i, :] = [ 3. 3. 36. 39.]
254 cord_individual_obj[indivial_i, :] = [ 4. 2. 0. 2.]
255 cord_individual_obj[indivial_i, :] = [ 5. 2. 0. 2.]
256 cord_individual_obj[indivial_i, :] = [ 6. 2. 0. 2.]
257 cord_individual_obj[indivial_i, :] = [ 7. 2. 16. 18.]
258 cord_individual_obj[indivial_i, :] = [ 8. 3. 6. 9.]
259 cord_individual_obj[indivial_i, :] = [ 9. 2. 16. 18.]
260 cord_individual_obj[indivial_i, :] = [10. 2. 0. 2.]
261 cord_individual_obj[indivial_i, :] = [11. 2. 36. 38.]
262 cord_individual_obj[indivial_i, :] = [12. 1. 6. 7.]
263 cord_individual_obj[indivial_i, :] = [13. 2. 0. 2.]
264 cord_individual_obj[indivial_i, :] = [14. 2. 36. 38.]
265 cord_individual_obj[indivial_i, :] = [15. 2. 0. 2.]
266 cord_individual_obj[indivial_i, :] = [16. 2. 6. 8.]
267 cord_individual_obj[indivial_i, :] = [17. 2. 0. 2.]
268 cord_individual_obj[indivial_i, :] = [18. 2. 0. 2.]
269 cord_individual_obj[indivial_i, :] = [19. 2. 36. 38.]
270 cord_individual_obj[indivial_i, :] = [20. 2. 16. 18.]
271 cord_individual_obj[indivial_i, :] = [21. 2. 0. 2.]
272 cord_individual_obj[indivial_i, :] = [22. 3. 6. 9.]
273 cord_individual_obj[indivial_i, :] = [23. 2. 6. 8.]
274 cord_individual_obj[indivial_i, :] = [24. 2. 0. 2.]
275

276 min(cord_individual_obj[:, 3]) = 2.0
277 historl_G_best_iter[iter, 3] = 2.0
278 Begin iteration:
279
280 iter = 8
281 cord_individual_obj[indivial_i, :] = [0. 1. 6. 7.]
282 cord_individual_obj[indivial_i, :] = [1. 2. 6. 8.]
283 cord_individual_obj[indivial_i, :] = [2. 2. 24. 26.]
284 cord_individual_obj[indivial_i, :] = [3. 2. 0. 2.]
285 cord_individual_obj[indivial_i, :] = [4. 1. 6. 7.]
286 cord_individual_obj[indivial_i, :] = [5. 2. 16. 18.]
287 cord_individual_obj[indivial_i, :] = [6. 1. 6. 7.]
288 cord_individual_obj[indivial_i, :] = [7. 2. 6. 8.]
289 cord_individual_obj[indivial_i, :] = [8. 3. 16. 19.]
290 cord_individual_obj[indivial_i, :] = [9. 2. 0. 2.]
291 cord_individual_obj[indivial_i, :] = [10. 3. 0. 3.]
292 cord_individual_obj[indivial_i, :] = [11. 2. 6. 8.]
293 cord_individual_obj[indivial_i, :] = [12. 2. 42. 44.]
294 cord_individual_obj[indivial_i, :] = [13. 2. 0. 2.]
295 cord_individual_obj[indivial_i, :] = [14. 2. 0. 2.]
296 cord_individual_obj[indivial_i, :] = [15. 2. 30. 32.]
297 cord_individual_obj[indivial_i, :] = [16. 2. 16. 18.]
298 cord_individual_obj[indivial_i, :] = [17. 2. 30. 32.]
299 cord_individual_obj[indivial_i, :] = [18. 2. 0. 2.]
300 cord_individual_obj[indivial_i, :] = [19. 2. 30. 32.]
301 cord_individual_obj[indivial_i, :] = [20. 2. 0. 2.]
302 cord_individual_obj[indivial_i, :] = [21. 1. 6. 7.]
303 cord_individual_obj[indivial_i, :] = [22. 1. 30. 31.]
304 cord_individual_obj[indivial_i, :] = [23. 2. 16. 18.]
305 cord_individual_obj[indivial_i, :] = [24. 2. 0. 2.]
306

307 min(cord_individual_obj[:, 3]) = 2.0
308 historl_G_best_iter[iter, 3] = 2.0
309 Begin iteration:
310
311 iter = 9
312 cord_individual_obj[indivial_i, :] = [0. 1. 6. 7.]
313 cord_individual_obj[indivial_i, :] = [1. 2. 6. 8.]
314 cord_individual_obj[indivial_i, :] = [2. 1. 6. 7.]
315 cord_individual_obj[indivial_i, :] = [3. 1. 40. 41.]
316 cord_individual_obj[indivial_i, :] = [4. 1. 6. 7.]
317 cord_individual_obj[indivial_i, :] = [5. 1. 42. 43.]
318 cord_individual_obj[indivial_i, :] = [6. 1. 6. 7.]
319 cord_individual_obj[indivial_i, :] = [7. 1. 92. 93.]
320 cord_individual_obj[indivial_i, :] = [8. 2. 6. 8.]
321 cord_individual_obj[indivial_i, :] = [9. 1. 6. 7.]
322 cord_individual_obj[indivial_i, :] = [10. 2. 0. 2.]
323 cord_individual_obj[indivial_i, :] = [11. 1. 16. 17.]
324 cord_individual_obj[indivial_i, :] = [12. 2. 0. 2.]
325 cord_individual_obj[indivial_i, :] = [13. 1. 30. 31.]
326 cord_individual_obj[indivial_i, :] = [14. 1. 16. 17.]
327 cord_individual_obj[indivial_i, :] = [15. 2. 0. 2.]
328 cord_individual_obj[indivial_i, :] = [16. 2. 0. 2.]
329 cord_individual_obj[indivial_i, :] = [17. 1. 16. 17.]
330 cord_individual_obj[indivial_i, :] = [18. 2. 0. 2.]
331 cord_individual_obj[indivial_i, :] = [19. 2. 0. 2.]

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332     cord_individual_obj[indivial_i, :] = [20. 1. 6. 7.]
333     cord_individual_obj[indivial_i, :] = [21. 2. 0. 2.]
334     cord_individual_obj[indivial_i, :] = [22. 2. 0. 2.]
335     cord_individual_obj[indivial_i, :] = [23. 1. 22. 23.]
336     cord_individual_obj[indivial_i, :] = [24. 1. 42. 43.]
337
338 min(cord_individual_obj[:, 3]) = 2.0
339 historl_G_best_iter[iter, 3] = 2.0
340 Begin iteration:
341
342 iter = 10
343     cord_individual_obj[indivial_i, :] = [0. 2. 0. 2.]
344     cord_individual_obj[indivial_i, :] = [1. 2. 0. 2.]
345     cord_individual_obj[indivial_i, :] = [2. 2. 0. 2.]
346     cord_individual_obj[indivial_i, :] = [3. 2. 0. 2.]
347     cord_individual_obj[indivial_i, :] = [4. 2. 6. 8.]
348     cord_individual_obj[indivial_i, :] = [5. 2. 16. 18.]
349     cord_individual_obj[indivial_i, :] = [6. 1. 16. 17.]
350     cord_individual_obj[indivial_i, :] = [7. 2. 0. 2.]
351     cord_individual_obj[indivial_i, :] = [8. 2. 30. 32.]
352     cord_individual_obj[indivial_i, :] = [9. 1. 6. 7.]
353     cord_individual_obj[indivial_i, :] = [10. 2. 0. 2.]
354     cord_individual_obj[indivial_i, :] = [11. 3. 30. 33.]
355     cord_individual_obj[indivial_i, :] = [12. 1. 30. 31.]
356     cord_individual_obj[indivial_i, :] = [13. 2. 0. 2.]
357     cord_individual_obj[indivial_i, :] = [14. 1. 6. 7.]
358     cord_individual_obj[indivial_i, :] = [15. 2. 30. 32.]
359     cord_individual_obj[indivial_i, :] = [16. 2. 6. 8.]
360     cord_individual_obj[indivial_i, :] = [17. 2. 6. 8.]
361     cord_individual_obj[indivial_i, :] = [18. 3. 0. 3.]
362     cord_individual_obj[indivial_i, :] = [19. 2. 0. 2.]
363     cord_individual_obj[indivial_i, :] = [20. 1. 30. 31.]
364     cord_individual_obj[indivial_i, :] = [21. 2. 6. 8.]
365     cord_individual_obj[indivial_i, :] = [22. 3. 6. 9.]
366     cord_individual_obj[indivial_i, :] = [23. 2. 30. 32.]
367     cord_individual_obj[indivial_i, :] = [24. 1. 16. 17.]
368
369 min(cord_individual_obj[:, 3]) = 2.0
370 historl_G_best_iter[iter, 3] = 2.0
371 Begin iteration:
372
373 iter = 11
374     cord_individual_obj[indivial_i, :] = [0. 1. 42. 43.]
375     cord_individual_obj[indivial_i, :] = [1. 1. 6. 7.]
376     cord_individual_obj[indivial_i, :] = [2. 2. 40. 42.]
377     cord_individual_obj[indivial_i, :] = [3. 2. 40. 42.]
378     cord_individual_obj[indivial_i, :] = [4. 1. 6. 7.]
379     cord_individual_obj[indivial_i, :] = [5. 2. 0. 2.]
380     cord_individual_obj[indivial_i, :] = [6. 2. 6. 8.]
381     cord_individual_obj[indivial_i, :] = [7. 1. 70. 71.]
382     cord_individual_obj[indivial_i, :] = [8. 1. 6. 7.]
383     cord_individual_obj[indivial_i, :] = [9. 1. 6. 7.]
384     cord_individual_obj[indivial_i, :] = [10. 2. 0. 2.]
385     cord_individual_obj[indivial_i, :] = [11. 2. 0. 2.]
386     cord_individual_obj[indivial_i, :] = [12. 2. 0. 2.]
387     cord_individual_obj[indivial_i, :] = [13. 1. 6. 7.]
388     cord_individual_obj[indivial_i, :] = [14. 1. 42. 43.]
389     cord_individual_obj[indivial_i, :] = [15. 2. 0. 2.]
390     cord_individual_obj[indivial_i, :] = [16. 2. 6. 8.]
391     cord_individual_obj[indivial_i, :] = [17. 1. 6. 7.]
392     cord_individual_obj[indivial_i, :] = [18. 2. 0. 2.]
393     cord_individual_obj[indivial_i, :] = [19. 2. 16. 18.]
394     cord_individual_obj[indivial_i, :] = [20. 1. 30. 31.]
395     cord_individual_obj[indivial_i, :] = [21. 2. 0. 2.]
396     cord_individual_obj[indivial_i, :] = [22. 1. 6. 7.]
397     cord_individual_obj[indivial_i, :] = [23. 1. 6. 7.]
398     cord_individual_obj[indivial_i, :] = [24. 1. 42. 43.]
399
400 min(cord_individual_obj[:, 3]) = 2.0
401 historl_G_best_iter[iter, 3] = 2.0
402 Begin iteration:
403
404 iter = 12
405     cord_individual_obj[indivial_i, :] = [0. 2. 0. 2.]
406     cord_individual_obj[indivial_i, :] = [1. 2. 0. 2.]
407     cord_individual_obj[indivial_i, :] = [2. 2. 24. 26.]
408     cord_individual_obj[indivial_i, :] = [3. 2. 24. 26.]
409     cord_individual_obj[indivial_i, :] = [4. 1. 16. 17.]
410     cord_individual_obj[indivial_i, :] = [5. 1. 6. 7.]
411     cord_individual_obj[indivial_i, :] = [6. 1. 16. 17.]
412     cord_individual_obj[indivial_i, :] = [7. 2. 0. 2.]
413     cord_individual_obj[indivial_i, :] = [8. 1. 30. 31.]
414     cord_individual_obj[indivial_i, :] = [9. 1. 6. 7.]
415     cord_individual_obj[indivial_i, :] = [10. 2. 0. 2.]

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416 cord_individual_obj[indivial_i,:] = [11. 1. 6. 7.]
417 cord_individual_obj[indivial_i,:] = [12. 1. 30. 31.]
418 cord_individual_obj[indivial_i,:] = [13. 2. 0. 2.]
419 cord_individual_obj[indivial_i,:] = [14. 2. 0. 2.]
420 cord_individual_obj[indivial_i,:] = [15. 2. 30. 32.]
421 cord_individual_obj[indivial_i,:] = [16. 1. 16. 17.]
422 cord_individual_obj[indivial_i,:] = [17. 1. 6. 7.]
423 cord_individual_obj[indivial_i,:] = [18. 2. 0. 2.]
424 cord_individual_obj[indivial_i,:] = [19. 2. 0. 2.]
425 cord_individual_obj[indivial_i,:] = [20. 2. 0. 2.]
426 cord_individual_obj[indivial_i,:] = [21. 2. 6. 8.]
427 cord_individual_obj[indivial_i,:] = [22. 2. 16. 18.]
428 cord_individual_obj[indivial_i,:] = [23. 1. 48. 49.]
429 cord_individual_obj[indivial_i,:] = [24. 2. 0. 2.]
430
431 min(cord_individual_obj[:,3]) = 2.0
432 histol_G_best_iter[iter,3] = 2.0
433 Begin iteration:
434
435 iter = 13
436 cord_individual_obj[indivial_i,:] = [ 0. 1. 16. 17.]
437 cord_individual_obj[indivial_i,:] = [1. 1. 6. 7.]
438 cord_individual_obj[indivial_i,:] = [2. 2. 0. 2.]
439 cord_individual_obj[indivial_i,:] = [3. 1. 6. 7.]
440 cord_individual_obj[indivial_i,:] = [4. 2. 0. 2.]
441 cord_individual_obj[indivial_i,:] = [5. 2. 30. 32.]
442 cord_individual_obj[indivial_i,:] = [6. 2. 0. 2.]
443 cord_individual_obj[indivial_i,:] = [7. 1. 60. 61.]
444 cord_individual_obj[indivial_i,:] = [8. 1. 6. 7.]
445 cord_individual_obj[indivial_i,:] = [9. 1. 6. 7.]
446 cord_individual_obj[indivial_i,:] = [10. 2. 0. 2.]
447 cord_individual_obj[indivial_i,:] = [11. 1. 16. 17.]
448 cord_individual_obj[indivial_i,:] = [12. 1. 6. 7.]
449 cord_individual_obj[indivial_i,:] = [13. 1. 6. 7.]
450 cord_individual_obj[indivial_i,:] = [14. 1. 6. 7.]
451 cord_individual_obj[indivial_i,:] = [15. 2. 0. 2.]
452 cord_individual_obj[indivial_i,:] = [16. 2. 0. 2.]
453 cord_individual_obj[indivial_i,:] = [17. 1. 6. 7.]
454 cord_individual_obj[indivial_i,:] = [18. 2. 0. 2.]
455 cord_individual_obj[indivial_i,:] = [19. 2. 0. 2.]
456 cord_individual_obj[indivial_i,:] = [20. 2. 0. 2.]
457 cord_individual_obj[indivial_i,:] = [21. 2. 0. 2.]
458 cord_individual_obj[indivial_i,:] = [22. 2. 0. 2.]
459 cord_individual_obj[indivial_i,:] = [23. 2. 0. 2.]
460 cord_individual_obj[indivial_i,:] = [24. 1. 6. 7.]
461
462 min(cord_individual_obj[:,3]) = 2.0
463 histol_G_best_iter[iter,3] = 2.0
464 Begin iteration:
465
466 iter = 14
467 cord_individual_obj[indivial_i,:] = [0. 2. 0. 2.]
468 cord_individual_obj[indivial_i,:] = [1. 2. 36. 38.]
469 cord_individual_obj[indivial_i,:] = [2. 2. 12. 14.]
470 cord_individual_obj[indivial_i,:] = [3. 1. 24. 25.]
471 cord_individual_obj[indivial_i,:] = [4. 2. 6. 8.]
472 cord_individual_obj[indivial_i,:] = [5. 1. 16. 17.]
473 cord_individual_obj[indivial_i,:] = [6. 2. 6. 8.]
474 cord_individual_obj[indivial_i,:] = [7. 2. 0. 2.]
475 cord_individual_obj[indivial_i,:] = [8. 1. 6. 7.]
476 cord_individual_obj[indivial_i,:] = [9. 1. 6. 7.]
477 cord_individual_obj[indivial_i,:] = [10. 2. 0. 2.]
478 cord_individual_obj[indivial_i,:] = [11. 2. 30. 32.]
479 cord_individual_obj[indivial_i,:] = [12. 2. 0. 2.]
480 cord_individual_obj[indivial_i,:] = [13. 2. 0. 2.]
481 cord_individual_obj[indivial_i,:] = [14. 1. 16. 17.]
482 cord_individual_obj[indivial_i,:] = [15. 2. 0. 2.]
483 cord_individual_obj[indivial_i,:] = [16. 2. 6. 8.]
484 cord_individual_obj[indivial_i,:] = [17. 2. 6. 8.]
485 cord_individual_obj[indivial_i,:] = [18. 2. 0. 2.]
486 cord_individual_obj[indivial_i,:] = [19. 2. 0. 2.]
487 cord_individual_obj[indivial_i,:] = [20. 2. 0. 2.]
488 cord_individual_obj[indivial_i,:] = [21. 2. 6. 8.]
489 cord_individual_obj[indivial_i,:] = [22. 2. 6. 8.]
490 cord_individual_obj[indivial_i,:] = [23. 1. 6. 7.]
491 cord_individual_obj[indivial_i,:] = [24. 1. 6. 7.]
492
493 min(cord_individual_obj[:,3]) = 2.0
494 histol_G_best_iter[iter,3] = 2.0
495 Begin iteration:
496
497 iter = 15
498 cord_individual_obj[indivial_i,:] = [0. 2. 0. 2.]
499 cord_individual_obj[indivial_i,:] = [1. 2. 0. 2.]

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500 cord_individual_obj[indivial_i,:] = [2, 3, 4, 7.]
501 cord_individual_obj[indivial_i,:] = [3, 2, 12, 14.]
502 cord_individual_obj[indivial_i,:] = [4, 3, 16, 19.]
503 cord_individual_obj[indivial_i,:] = [5, 2, 0, 2.]
504 cord_individual_obj[indivial_i,:] = [6, 1, 16, 17.]
505 cord_individual_obj[indivial_i,:] = [7, 2, 40, 42.]
506 cord_individual_obj[indivial_i,:] = [8, 2, 16, 18.]
507 cord_individual_obj[indivial_i,:] = [9, 2, 0, 2.]
508 cord_individual_obj[indivial_i,:] = [10, 3, 0, 3.]
509 cord_individual_obj[indivial_i,:] = [11, 1, 6, 7.]
510 cord_individual_obj[indivial_i,:] = [12, 3, 0, 3.]
511 cord_individual_obj[indivial_i,:] = [13, 1, 6, 7.]
512 cord_individual_obj[indivial_i,:] = [14, 1, 16, 17.]
513 cord_individual_obj[indivial_i,:] = [15, 2, 16, 18.]
514 cord_individual_obj[indivial_i,:] = [16, 1, 16, 17.]
515 cord_individual_obj[indivial_i,:] = [17, 3, 6, 9.]
516 cord_individual_obj[indivial_i,:] = [18, 2, 0, 2.]
517 cord_individual_obj[indivial_i,:] = [19, 1, 16, 17.]
518 cord_individual_obj[indivial_i,:] = [20, 1, 6, 7.]
519 cord_individual_obj[indivial_i,:] = [21, 3, 6, 9.]
520 cord_individual_obj[indivial_i,:] = [22, 2, 16, 18.]
521 cord_individual_obj[indivial_i,:] = [23, 1, 30, 31.]
522 cord_individual_obj[indivial_i,:] = [24, 1, 6, 7.]
523
524 min(cord_individual_obj[:, 3]) = 2.0
525 histol_G_best_iter[iter, 3] = 2.0
526 Begin iteration:
527
528 iter = 16
529 cord_individual_obj[indivial_i,:] = [0, 1, 30, 31.]
530 cord_individual_obj[indivial_i,:] = [1, 1, 16, 17.]
531 cord_individual_obj[indivial_i,:] = [2, 2, 40, 42.]
532 cord_individual_obj[indivial_i,:] = [3, 3, 4, 7.]
533 cord_individual_obj[indivial_i,:] = [4, 1, 30, 31.]
534 cord_individual_obj[indivial_i,:] = [5, 2, 0, 2.]
535 cord_individual_obj[indivial_i,:] = [6, 1, 30, 31.]
536 cord_individual_obj[indivial_i,:] = [7, 2, 0, 2.]
537 cord_individual_obj[indivial_i,:] = [8, 3, 40, 43.]
538 cord_individual_obj[indivial_i,:] = [9, 2, 0, 2.]
539 cord_individual_obj[indivial_i,:] = [10, 2, 0, 2.]
540 cord_individual_obj[indivial_i,:] = [11, 3, 30, 33.]
541 cord_individual_obj[indivial_i,:] = [12, 1, 6, 7.]
542 cord_individual_obj[indivial_i,:] = [13, 2, 0, 2.]
543 cord_individual_obj[indivial_i,:] = [14, 1, 16, 17.]
544 cord_individual_obj[indivial_i,:] = [15, 2, 110, 112.]
545 cord_individual_obj[indivial_i,:] = [16, 1, 30, 31.]
546 cord_individual_obj[indivial_i,:] = [17, 2, 6, 8.]
547 cord_individual_obj[indivial_i,:] = [18, 2, 0, 2.]
548 cord_individual_obj[indivial_i,:] = [19, 1, 16, 17.]
549 cord_individual_obj[indivial_i,:] = [20, 1, 78, 79.]
550 cord_individual_obj[indivial_i,:] = [21, 1, 6, 7.]
551 cord_individual_obj[indivial_i,:] = [22, 1, 30, 31.]
552 cord_individual_obj[indivial_i,:] = [23, 1, 84, 85.]
553 cord_individual_obj[indivial_i,:] = [24, 1, 6, 7.]
554
555 min(cord_individual_obj[:, 3]) = 2.0
556 histol_G_best_iter[iter, 3] = 2.0
557 Begin iteration:
558
559 iter = 17
560 cord_individual_obj[indivial_i,:] = [0, 2, 30, 32.]
561 cord_individual_obj[indivial_i,:] = [1, 3, 36, 39.]
562 cord_individual_obj[indivial_i,:] = [2, 2, 30, 32.]
563 cord_individual_obj[indivial_i,:] = [3, 3, 30, 33.]
564 cord_individual_obj[indivial_i,:] = [4, 1, 6, 7.]
565 cord_individual_obj[indivial_i,:] = [5, 3, 16, 19.]
566 cord_individual_obj[indivial_i,:] = [6, 2, 6, 8.]
567 cord_individual_obj[indivial_i,:] = [7, 2, 12, 14.]
568 cord_individual_obj[indivial_i,:] = [8, 3, 6, 9.]
569 cord_individual_obj[indivial_i,:] = [9, 2, 6, 8.]
570 cord_individual_obj[indivial_i,:] = [10, 2, 0, 2.]
571 cord_individual_obj[indivial_i,:] = [11, 1, 6, 7.]
572 cord_individual_obj[indivial_i,:] = [12, 2, 16, 18.]
573 cord_individual_obj[indivial_i,:] = [13, 2, 30, 32.]
574 cord_individual_obj[indivial_i,:] = [14, 3, 6, 9.]
575 cord_individual_obj[indivial_i,:] = [15, 2, 0, 2.]
576 cord_individual_obj[indivial_i,:] = [16, 3, 6, 9.]
577 cord_individual_obj[indivial_i,:] = [17, 2, 6, 8.]
578 cord_individual_obj[indivial_i,:] = [18, 3, 0, 3.]
579 cord_individual_obj[indivial_i,:] = [19, 2, 0, 2.]
580 cord_individual_obj[indivial_i,:] = [20, 1, 6, 7.]
581 cord_individual_obj[indivial_i,:] = [21, 3, 6, 9.]
582 cord_individual_obj[indivial_i,:] = [22, 1, 6, 7.]
583 cord_individual_obj[indivial_i,:] = [23, 1, 6, 7.]

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unknown

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584     cord_individual_obj[indivial_i, :] = [24. 3. 30. 33.]  
585  
586     min(cord_individual_obj[:, 3]) = 2.0  
587     historl_G_best_iter[iter, 3] = 2.0  
588 Begin iteration:  
589 iter = 18  
591     cord_individual_obj[indivial_i, :] = [ 0. 1. 16. 17.]  
592     cord_individual_obj[indivial_i, :] = [1. 2. 0. 2.]  
593     cord_individual_obj[indivial_i, :] = [ 2. 2. 30. 32.]  
594     cord_individual_obj[indivial_i, :] = [3. 1. 6. 7.]  
595     cord_individual_obj[indivial_i, :] = [ 4. 1. 22. 23.]  
596     cord_individual_obj[indivial_i, :] = [ 5. 1. 16. 17.]  
597     cord_individual_obj[indivial_i, :] = [6. 2. 6. 8.]  
598     cord_individual_obj[indivial_i, :] = [ 7. 2. 30. 32.]  
599     cord_individual_obj[indivial_i, :] = [ 8. 1. 30. 31.]  
600     cord_individual_obj[indivial_i, :] = [ 9. 1. 36. 37.]  
601     cord_individual_obj[indivial_i, :] = [10. 2. 0. 2.]  
602     cord_individual_obj[indivial_i, :] = [11. 2. 0. 2.]  
603     cord_individual_obj[indivial_i, :] = [12. 2. 0. 2.]  
604     cord_individual_obj[indivial_i, :] = [13. 2. 0. 2.]  
605     cord_individual_obj[indivial_i, :] = [14. 2. 16. 18.]  
606     cord_individual_obj[indivial_i, :] = [15. 2. 30. 32.]  
607     cord_individual_obj[indivial_i, :] = [16. 3. 6. 9.]  
608     cord_individual_obj[indivial_i, :] = [17. 2. 0. 2.]  
609     cord_individual_obj[indivial_i, :] = [18. 2. 0. 2.]  
610     cord_individual_obj[indivial_i, :] = [19. 2. 16. 18.]  
611     cord_individual_obj[indivial_i, :] = [20. 2. 16. 18.]  
612     cord_individual_obj[indivial_i, :] = [21. 2. 0. 2.]  
613     cord_individual_obj[indivial_i, :] = [22. 1. 6. 7.]  
614     cord_individual_obj[indivial_i, :] = [23. 1. 6. 7.]  
615     cord_individual_obj[indivial_i, :] = [24. 1. 30. 31.]  
616  
617     min(cord_individual_obj[:, 3]) = 2.0  
618     historl_G_best_iter[iter, 3] = 2.0  
619 Begin iteration:  
620  
621 iter = 19  
622     cord_individual_obj[indivial_i, :] = [0. 1. 6. 7.]  
623     cord_individual_obj[indivial_i, :] = [ 1. 1. 16. 17.]  
624     cord_individual_obj[indivial_i, :] = [ 2. 2. 16. 18.]  
625     cord_individual_obj[indivial_i, :] = [3. 2. 0. 2.]  
626     cord_individual_obj[indivial_i, :] = [4. 1. 6. 7.]  
627     cord_individual_obj[indivial_i, :] = [ 5. 2. 16. 18.]  
628     cord_individual_obj[indivial_i, :] = [ 6. 1. 6. 7.]  
629     cord_individual_obj[indivial_i, :] = [ 7. 1. 42. 43.]  
630     cord_individual_obj[indivial_i, :] = [ 8. 1. 6. 7.]  
631     cord_individual_obj[indivial_i, :] = [ 9. 2. 0. 2.]  
632     cord_individual_obj[indivial_i, :] = [10. 2. 0. 2.]  
633     cord_individual_obj[indivial_i, :] = [11. 2. 0. 2.]  
634     cord_individual_obj[indivial_i, :] = [12. 2. 36. 38.]  
635     cord_individual_obj[indivial_i, :] = [13. 1. 30. 31.]  
636     cord_individual_obj[indivial_i, :] = [14. 2. 0. 2.]  
637     cord_individual_obj[indivial_i, :] = [15. 2. 0. 2.]  
638     cord_individual_obj[indivial_i, :] = [16. 2. 6. 8.]  
639     cord_individual_obj[indivial_i, :] = [17. 2. 0. 2.]  
640     cord_individual_obj[indivial_i, :] = [18. 2. 0. 2.]  
641     cord_individual_obj[indivial_i, :] = [19. 1. 6. 7.]  
642     cord_individual_obj[indivial_i, :] = [20. 3. 30. 33.]  
643     cord_individual_obj[indivial_i, :] = [21. 1. 6. 7.]  
644     cord_individual_obj[indivial_i, :] = [22. 1. 6. 7.]  
645     cord_individual_obj[indivial_i, :] = [23. 1. 6. 7.]  
646     cord_individual_obj[indivial_i, :] = [24. 1. 22. 23.]  
647  
648     min(cord_individual_obj[:, 3]) = 2.0  
649     historl_G_best_iter[iter, 3] = 2.0  
650 Begin iteration:  
651  
652 iter = 20  
653     cord_individual_obj[indivial_i, :] = [ 0. 1. 48. 49.]  
654     cord_individual_obj[indivial_i, :] = [ 1. 1. 16. 17.]  
655     cord_individual_obj[indivial_i, :] = [ 2. 2. 84. 86.]  
656     cord_individual_obj[indivial_i, :] = [ 3. 2. 84. 86.]  
657     cord_individual_obj[indivial_i, :] = [4. 1. 6. 7.]  
658     cord_individual_obj[indivial_i, :] = [5. 1. 6. 7.]  
659     cord_individual_obj[indivial_i, :] = [ 6. 1. 22. 23.]  
660     cord_individual_obj[indivial_i, :] = [ 7. 2. 0. 2.]  
661     cord_individual_obj[indivial_i, :] = [ 8. 1. 6. 7.]  
662     cord_individual_obj[indivial_i, :] = [ 9. 0. 84. 84.]  
663     cord_individual_obj[indivial_i, :] = [10. 2. 0. 2.]  
664     cord_individual_obj[indivial_i, :] = [11. 1. 16. 17.]  
665     cord_individual_obj[indivial_i, :] = [12. 1. 58. 59.]  
666     cord_individual_obj[indivial_i, :] = [13. 2. 0. 2.]  
667     cord_individual_obj[indivial_i, :] = [14. 1. 48. 49.]
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668 cord_individual_obj[indivial_i, :] = [15. 2. 0. 2.]
669 cord_individual_obj[indivial_i, :] = [16. 1. 6. 7.]
670 cord_individual_obj[indivial_i, :] = [17. 1. 30. 31.]
671 cord_individual_obj[indivial_i, :] = [18. 2. 0. 2.]
672 cord_individual_obj[indivial_i, :] = [19. 1. 30. 31.]
673 cord_individual_obj[indivial_i, :] = [20. 1. 58. 59.]
674 cord_individual_obj[indivial_i, :] = [21. 1. 6. 7.]
675 cord_individual_obj[indivial_i, :] = [22. 1. 6. 7.]
676 cord_individual_obj[indivial_i, :] = [23. 2. 6. 8.]
677 cord_individual_obj[indivial_i, :] = [24. 1. 22. 23.]
678
679 min(cord_individual_obj[:, 3]) = 2.0
680 historl_G_best_iter[iter, 3] = 2.0
681 Iteration calculate over
682
683
684
685
686 All item are in Bin and:
687 Bin area = 1080
688 Real_area = 39.0
689 Proportion_of_area = 0.0361111111111111
690 BEST_CHROM =
691     berth: [ 4. 10.5 17. 25.5]
692     time: [0. 0. 0. 0.]
693     num_QC: [5. 2. 8. 2.]
694 Objective function values and some other indicators:
695 Obj0 = 2.00          Obj1 = 0.00          Obj0 + Obj1 = 2.00
696 Total movement of crane: 0.00
697 Total waiting time in berth position: 0.00
698 Total index of q during berthing: 274.00
699 Specific arrangement for each vessel:
700
    V_id: 0           li: 8.0           xi: 4.0           bow of i: 0.0           tail of i: 8.0           gama_i0: 0.0           gama_i1: 1.0
    .0                 gama_i1 + 1: 2.0      gama_i1 - gama_i0: 1.0      duration_time_i: 2.0      demand_i: 120.0      work load_i:
120.0               work load gap_i: 0
701
    V_id: 1           li: 5.0           xi: 10.5           bow of i: 8.0           tail of i: 13.0           gama_i0: 0.0           gama_i1: 1
    .0                 gama_i1 + 1: 2.0      gama_i1 - gama_i0: 1.0      duration_time_i: 2.0      demand_i: 60.0      work
    load_i: 60.0       work load gap_i: 0
702
    V_id: 2           li: 8.0           xi: 17.0           bow of i: 13.0           tail of i: 21.0           gama_i0: 0.0           gama_i1: 0
    .0                 gama_i1 + 1: 1.0      gama_i1 - gama_i0: 0.0      duration_time_i: 1.0      demand_i: 160.0      work
    load_i: 160.0      work load gap_i: 0
703
    V_id: 3           li: 9.0           xi: 25.5           bow of i: 21.0           tail of i: 30.0           gama_i0: 0.0           gama_i1: 2
    .0                 gama_i1 + 1: 3.0      gama_i1 - gama_i0: 2.0      duration_time_i: 3.0      demand_i: 100.0      work
    load_i: 100.0      work load gap_i: 0
704
705 Algorithm finished and the total CPU time: 111 s
706 End
707

```