

unknown

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1 "E:\我的云盘\3 项目\1 项目\1 项目\1_LW_00002\6 0000\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=18181
2
3 import sys; print('Python %s on %s' % (sys.version, sys.platform))
4 sys.path.append(['E:\我的云盘\3 项目\1 项目\1 项目\1_LW_00002\6 0000\2 python code\01_My_Python_Code', 'E:/1 项目/3 项目/1 项目/1_LW_00002\6 0000\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 项目/3 项目/1 项目/1_LW_00002\6 0000\2 python code\01_My_Python_Code/main_BACASP_offical_PSO_2D_Bin_berth_line.py', wdir='E:/1 项目/3 项目/1 项目/1_LW_00002\6 0000\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_6_1_standerd_test.xlsx optimization process.
14
15 Start
16   Read basic data
17     V = 6
18     T = 36
19     Q = 23
20     L = 30
21 PSO parameter setting:
22   maxIter_num = 20
23   W_inertia = 2.0
24   oder_type_num = 25
25   c1 = 2.5
26   c2 = 1.0
27   r1 = 0.5855215032412365
28   r2 = 0.5855215032412365
29 Begin iteration:
30
31 iter = 0
32 cord_individual_obj[individual_i, :] = [ 0. 5. 28. 33.]
33 cord_individual_obj[individual_i, :] = [ 1. 5. 32. 37.]
34 cord_individual_obj[individual_i, :] = [ 2. 5. 18. 23.]
35 cord_individual_obj[individual_i, :] = [ 3. 4. 108. 112.]
36 cord_individual_obj[individual_i, :] = [ 4. 6. 46. 52.]
37 cord_individual_obj[individual_i, :] = [ 5. 5. 68. 73.]
38 cord_individual_obj[individual_i, :] = [ 6. 5. 38. 43.]
39 cord_individual_obj[individual_i, :] = [ 7. 6. 8. 14.]
40 cord_individual_obj[individual_i, :] = [ 8. 5. 42. 47.]
41 cord_individual_obj[individual_i, :] = [ 9. 4. 50. 54.]
42 cord_individual_obj[individual_i, :] = [10. 4. 46. 50.]
43 cord_individual_obj[individual_i, :] = [11. 5. 38. 43.]
44 cord_individual_obj[individual_i, :] = [12. 5. 34. 39.]
45 cord_individual_obj[individual_i, :] = [13. 5. 32. 37.]
46 cord_individual_obj[individual_i, :] = [14. 4. 16. 20.]
47 cord_individual_obj[individual_i, :] = [15. 5. 22. 27.]
48 cord_individual_obj[individual_i, :] = [16. 6. 82. 88.]
49 cord_individual_obj[individual_i, :] = [17. 5. 82. 87.]
50 cord_individual_obj[individual_i, :] = [18. 6. 22. 28.]
51 cord_individual_obj[individual_i, :] = [19. 6. 70. 76.]
52 cord_individual_obj[individual_i, :] = [20. 6. 12. 18.]
53 cord_individual_obj[individual_i, :] = [21. 6. 44. 50.]
54 cord_individual_obj[individual_i, :] = [22. 4. 76. 80.]
55 cord_individual_obj[individual_i, :] = [23. 6. 8. 14.]
56 cord_individual_obj[individual_i, :] = [24. 4. 36. 40.]
57
58 min(cord_individual_obj[:, 3]) = 14.0
59 histor1_G_best_iter[iter, 3] = 14.0
60 Begin iteration:
61
62 iter = 1
63   cord_individual_obj[individual_i, :] = [ 0. 5. 12. 17.]
64   cord_individual_obj[individual_i, :] = [ 1. 5. 28. 33.]
65   cord_individual_obj[individual_i, :] = [ 2. 6. 28. 34.]
66   cord_individual_obj[individual_i, :] = [ 3. 6. 8. 14.]
67   cord_individual_obj[individual_i, :] = [ 4. 6. 36. 42.]
68   cord_individual_obj[individual_i, :] = [ 5. 6. 18. 24.]
69   cord_individual_obj[individual_i, :] = [ 6. 6. 32. 38.]
70   cord_individual_obj[individual_i, :] = [ 7. 5. 48. 53.]
71   cord_individual_obj[individual_i, :] = [ 8. 6. 28. 34.]
72   cord_individual_obj[individual_i, :] = [ 9. 4. 34. 38.]
73   cord_individual_obj[individual_i, :] = [10. 6. 24. 30.]
74   cord_individual_obj[individual_i, :] = [11. 6. 38. 44.]
75   cord_individual_obj[individual_i, :] = [12. 6. 12. 18.]
76   cord_individual_obj[individual_i, :] = [13. 6. 8. 14.]
77   cord_individual_obj[individual_i, :] = [14. 4. 42. 46.]
78   cord_individual_obj[individual_i, :] = [15. 4. 62. 66.]
79   cord_individual_obj[individual_i, :] = [16. 4. 12. 16.]

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80 cord_individual_obj[indivial_i,:] = [17. 6. 28. 34.]
81 cord_individual_obj[indivial_i,:] = [18. 5. 62. 67.]
82 cord_individual_obj[indivial_i,:] = [19. 4. 70. 74.]
83 cord_individual_obj[indivial_i,:] = [20. 5. 46. 51.]
84 cord_individual_obj[indivial_i,:] = [21. 6. 24. 30.]
85 cord_individual_obj[indivial_i,:] = [22. 5. 76. 81.]
86 cord_individual_obj[indivial_i,:] = [23. 5. 48. 53.]
87 cord_individual_obj[indivial_i,:] = [24. 4. 66. 70.]
88
89 min(cord_individual_obj[:,3]) = 14.0
90 historl_G_best_iter[iter,3] = 14.0
91 Begin iteration:
92
93 iter = 2
94 cord_individual_obj[indivial_i,:] = [ 0. 4. 44. 48.]
95 cord_individual_obj[indivial_i,:] = [ 1. 5. 20. 25.]
96 cord_individual_obj[indivial_i,:] = [ 2. 6. 20. 26.]
97 cord_individual_obj[indivial_i,:] = [ 3. 4. 34. 38.]
98 cord_individual_obj[indivial_i,:] = [ 4. 6. 24. 30.]
99 cord_individual_obj[indivial_i,:] = [ 5. 5. 12. 17.]
100 cord_individual_obj[indivial_i,:] = [ 6. 5. 42. 47.]
101 cord_individual_obj[indivial_i,:] = [ 7. 6. 56. 62.]
102 cord_individual_obj[indivial_i,:] = [ 8. 5. 30. 35.]
103 cord_individual_obj[indivial_i,:] = [ 9. 4. 84. 88.]
104 cord_individual_obj[indivial_i,:] = [10. 6. 28. 34.]
105 cord_individual_obj[indivial_i,:] = [11. 3. 92. 95.]
106 cord_individual_obj[indivial_i,:] = [12. 6. 8. 14.]
107 cord_individual_obj[indivial_i,:] = [13. 4. 42. 46.]
108 cord_individual_obj[indivial_i,:] = [14. 5. 24. 29.]
109 cord_individual_obj[indivial_i,:] = [15. 5. 60. 65.]
110 cord_individual_obj[indivial_i,:] = [16. 5. 22. 27.]
111 cord_individual_obj[indivial_i,:] = [17. 5. 34. 39.]
112 cord_individual_obj[indivial_i,:] = [18. 6. 76. 82.]
113 cord_individual_obj[indivial_i,:] = [19. 4. 64. 68.]
114 cord_individual_obj[indivial_i,:] = [20. 5. 52. 57.]
115 cord_individual_obj[indivial_i,:] = [21. 6. 24. 30.]
116 cord_individual_obj[indivial_i,:] = [22. 6. 8. 14.]
117 cord_individual_obj[indivial_i,:] = [23. 6. 24. 30.]
118 cord_individual_obj[indivial_i,:] = [24. 4. 52. 56.]
119
120 min(cord_individual_obj[:,3]) = 14.0
121 historl_G_best_iter[iter,3] = 14.0
122 Begin iteration:
123
124 iter = 3
125 cord_individual_obj[indivial_i,:] = [ 0. 6. 16. 22.]
126 cord_individual_obj[indivial_i,:] = [ 1. 4. 28. 32.]
127 cord_individual_obj[indivial_i,:] = [ 2. 6. 12. 18.]
128 cord_individual_obj[indivial_i,:] = [ 3. 4. 18. 22.]
129 cord_individual_obj[indivial_i,:] = [ 4. 6. 12. 18.]
130 cord_individual_obj[indivial_i,:] = [ 5. 6. 18. 24.]
131 cord_individual_obj[indivial_i,:] = [ 6. 5. 20. 25.]
132 cord_individual_obj[indivial_i,:] = [ 7. 5. 12. 17.]
133 cord_individual_obj[indivial_i,:] = [ 8. 6. 28. 34.]
134 cord_individual_obj[indivial_i,:] = [ 9. 4. 42. 46.]
135 cord_individual_obj[indivial_i,:] = [10. 6. 12. 18.]
136 cord_individual_obj[indivial_i,:] = [11. 6. 8. 14.]
137 cord_individual_obj[indivial_i,:] = [12. 6. 12. 18.]
138 cord_individual_obj[indivial_i,:] = [13. 3. 36. 39.]
139 cord_individual_obj[indivial_i,:] = [14. 6. 24. 30.]
140 cord_individual_obj[indivial_i,:] = [15. 6. 44. 50.]
141 cord_individual_obj[indivial_i,:] = [16. 6. 8. 14.]
142 cord_individual_obj[indivial_i,:] = [17. 6. 24. 30.]
143 cord_individual_obj[indivial_i,:] = [18. 5. 30. 35.]
144 cord_individual_obj[indivial_i,:] = [19. 4. 30. 34.]
145 cord_individual_obj[indivial_i,:] = [20. 6. 32. 38.]
146 cord_individual_obj[indivial_i,:] = [21. 6. 24. 30.]
147 cord_individual_obj[indivial_i,:] = [22. 4. 24. 28.]
148 cord_individual_obj[indivial_i,:] = [23. 4. 52. 56.]
149 cord_individual_obj[indivial_i,:] = [24. 6. 38. 44.]
150
151 min(cord_individual_obj[:,3]) = 14.0
152 historl_G_best_iter[iter,3] = 14.0
153 Begin iteration:
154
155 iter = 4
156 cord_individual_obj[indivial_i,:] = [ 0. 5. 58. 63.]
157 cord_individual_obj[indivial_i,:] = [ 1. 6. 28. 34.]
158 cord_individual_obj[indivial_i,:] = [ 2. 6. 54. 60.]
159 cord_individual_obj[indivial_i,:] = [ 3. 4. 20. 24.]
160 cord_individual_obj[indivial_i,:] = [ 4. 6. 20. 26.]
161 cord_individual_obj[indivial_i,:] = [ 5. 6. 12. 18.]
162 cord_individual_obj[indivial_i,:] = [ 6. 5. 28. 33.]
163 cord_individual_obj[indivial_i,:] = [ 7. 6. 84. 90.]

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164 cord_individual_obj[indivial_i,:] = [ 8. 5. 28. 33.]
165 cord_individual_obj[indivial_i,:] = [ 9. 5. 44. 49.]
166 cord_individual_obj[indivial_i,:] = [10. 6. 32. 38.]
167 cord_individual_obj[indivial_i,:] = [11. 4. 36. 40.]
168 cord_individual_obj[indivial_i,:] = [12. 6. 8. 14.]
169 cord_individual_obj[indivial_i,:] = [13. 5. 22. 27.]
170 cord_individual_obj[indivial_i,:] = [14. 6. 50. 56.]
171 cord_individual_obj[indivial_i,:] = [15. 5. 80. 85.]
172 cord_individual_obj[indivial_i,:] = [16. 5. 36. 41.]
173 cord_individual_obj[indivial_i,:] = [17. 6. 8. 14.]
174 cord_individual_obj[indivial_i,:] = [18. 5. 36. 41.]
175 cord_individual_obj[indivial_i,:] = [19. 4. 38. 42.]
176 cord_individual_obj[indivial_i,:] = [20. 5. 60. 65.]
177 cord_individual_obj[indivial_i,:] = [21. 6. 12. 18.]
178 cord_individual_obj[indivial_i,:] = [22. 4. 34. 38.]
179 cord_individual_obj[indivial_i,:] = [23. 6. 8. 14.]
180 cord_individual_obj[indivial_i,:] = [24. 6. 48. 54.]
181
182 min(cord_individual_obj[:,3]) = 14.0
183 historl_G_best_iter[iter,3] = 14.0
184 Begin iteration:
185
186 iter = 5
187 cord_individual_obj[indivial_i,:] = [ 0. 6. 24. 30.]
188 cord_individual_obj[indivial_i,:] = [ 1. 5. 78. 83.]
189 cord_individual_obj[indivial_i,:] = [ 2. 6. 56. 62.]
190 cord_individual_obj[indivial_i,:] = [ 3. 3. 64. 67.]
191 cord_individual_obj[indivial_i,:] = [ 4. 6. 12. 18.]
192 cord_individual_obj[indivial_i,:] = [ 5. 4. 8. 12.]
193 cord_individual_obj[indivial_i,:] = [ 6. 6. 40. 46.]
194 cord_individual_obj[indivial_i,:] = [ 7. 6. 8. 14.]
195 cord_individual_obj[indivial_i,:] = [ 8. 6. 24. 30.]
196 cord_individual_obj[indivial_i,:] = [ 9. 4. 74. 78.]
197 cord_individual_obj[indivial_i,:] = [10. 6. 24. 30.]
198 cord_individual_obj[indivial_i,:] = [11. 6. 60. 66.]
199 cord_individual_obj[indivial_i,:] = [12. 6. 8. 14.]
200 cord_individual_obj[indivial_i,:] = [13. 6. 50. 56.]
201 cord_individual_obj[indivial_i,:] = [14. 6. 38. 44.]
202 cord_individual_obj[indivial_i,:] = [15. 6. 44. 50.]
203 cord_individual_obj[indivial_i,:] = [16. 6. 8. 14.]
204 cord_individual_obj[indivial_i,:] = [17. 4. 68. 72.]
205 cord_individual_obj[indivial_i,:] = [18. 6. 40. 46.]
206 cord_individual_obj[indivial_i,:] = [19. 4. 56. 60.]
207 cord_individual_obj[indivial_i,:] = [20. 4. 46. 50.]
208 cord_individual_obj[indivial_i,:] = [21. 6. 36. 42.]
209 cord_individual_obj[indivial_i,:] = [22. 4. 62. 66.]
210 cord_individual_obj[indivial_i,:] = [23. 4. 30. 34.]
211 cord_individual_obj[indivial_i,:] = [24. 6. 50. 56.]
212
213 min(cord_individual_obj[:,3]) = 12.0
214 historl_G_best_iter[iter,3] = 12.0
215 Begin iteration:
216
217 iter = 6
218 cord_individual_obj[indivial_i,:] = [ 0. 6. 8. 14.]
219 cord_individual_obj[indivial_i,:] = [ 1. 4. 8. 12.]
220 cord_individual_obj[indivial_i,:] = [ 2. 3. 8. 11.]
221 cord_individual_obj[indivial_i,:] = [ 3. 3. 50. 53.]
222 cord_individual_obj[indivial_i,:] = [ 4. 3. 68. 71.]
223 cord_individual_obj[indivial_i,:] = [ 5. 4. 8. 12.]
224 cord_individual_obj[indivial_i,:] = [ 6. 6. 40. 46.]
225 cord_individual_obj[indivial_i,:] = [ 7. 6. 8. 14.]
226 cord_individual_obj[indivial_i,:] = [ 8. 5. 8. 13.]
227 cord_individual_obj[indivial_i,:] = [ 9. 4. 12. 16.]
228 cord_individual_obj[indivial_i,:] = [10. 4. 80. 84.]
229 cord_individual_obj[indivial_i,:] = [11. 4. 144. 148.]
230 cord_individual_obj[indivial_i,:] = [12. 4. 8. 12.]
231 cord_individual_obj[indivial_i,:] = [13. 4. 32. 36.]
232 cord_individual_obj[indivial_i,:] = [14. 5. 8. 13.]
233 cord_individual_obj[indivial_i,:] = [15. 4. 44. 48.]
234 cord_individual_obj[indivial_i,:] = [16. 6. 24. 30.]
235 cord_individual_obj[indivial_i,:] = [17. 4. 24. 28.]
236 cord_individual_obj[indivial_i,:] = [18. 6. 60. 66.]
237 cord_individual_obj[indivial_i,:] = [19. 4. 38. 42.]
238 cord_individual_obj[indivial_i,:] = [20. 4. 104. 108.]
239 cord_individual_obj[indivial_i,:] = [21. 4. 62. 66.]
240 cord_individual_obj[indivial_i,:] = [22. 4. 44. 48.]
241 cord_individual_obj[indivial_i,:] = [23. 6. 16. 22.]
242 cord_individual_obj[indivial_i,:] = [24. 4. 52. 56.]
243
244 min(cord_individual_obj[:,3]) = 11.0
245 historl_G_best_iter[iter,3] = 11.0
246 Begin iteration:
247

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248 iter = 7
249 cord_individual_obj[indivial_i, :] = [ 0. 6. 12. 18.]
250 cord_individual_obj[indivial_i, :] = [ 1. 6. 36. 42.]
251 cord_individual_obj[indivial_i, :] = [ 2. 5. 36. 41.]
252 cord_individual_obj[indivial_i, :] = [ 3. 4. 52. 56.]
253 cord_individual_obj[indivial_i, :] = [ 4. 4. 30. 34.]
254 cord_individual_obj[indivial_i, :] = [ 5. 4. 8. 12.]
255 cord_individual_obj[indivial_i, :] = [ 6. 6. 28. 34.]
256 cord_individual_obj[indivial_i, :] = [ 7. 6. 12. 18.]
257 cord_individual_obj[indivial_i, :] = [ 8. 5. 24. 29.]
258 cord_individual_obj[indivial_i, :] = [ 9. 4. 86. 90.]
259 cord_individual_obj[indivial_i, :] = [10. 4. 8. 12.]
260 cord_individual_obj[indivial_i, :] = [11. 3. 8. 11.]
261 cord_individual_obj[indivial_i, :] = [12. 5. 8. 13.]
262 cord_individual_obj[indivial_i, :] = [13. 4. 30. 34.]
263 cord_individual_obj[indivial_i, :] = [14. 5. 12. 17.]
264 cord_individual_obj[indivial_i, :] = [15. 6. 16. 22.]
265 cord_individual_obj[indivial_i, :] = [16. 6. 12. 18.]
266 cord_individual_obj[indivial_i, :] = [17. 4. 48. 52.]
267 cord_individual_obj[indivial_i, :] = [18. 6. 40. 46.]
268 cord_individual_obj[indivial_i, :] = [19. 3. 44. 47.]
269 cord_individual_obj[indivial_i, :] = [20. 5. 40. 45.]
270 cord_individual_obj[indivial_i, :] = [21. 4. 62. 66.]
271 cord_individual_obj[indivial_i, :] = [22. 4. 34. 38.]
272 cord_individual_obj[indivial_i, :] = [23. 3. 16. 19.]
273 cord_individual_obj[indivial_i, :] = [24. 4. 48. 52.]
274
275 min(cord_individual_obj[:, 3]) = 11.0
276 historl_G_best_iter[iter, 3] = 11.0
277 Begin iteration:
278
279 iter = 8
280 cord_individual_obj[indivial_i, :] = [ 0. 5. 20. 25.]
281 cord_individual_obj[indivial_i, :] = [ 1. 6. 8. 14.]
282 cord_individual_obj[indivial_i, :] = [ 2. 4. 8. 12.]
283 cord_individual_obj[indivial_i, :] = [ 3. 4. 28. 32.]
284 cord_individual_obj[indivial_i, :] = [ 4. 3. 66. 69.]
285 cord_individual_obj[indivial_i, :] = [ 5. 4. 12. 16.]
286 cord_individual_obj[indivial_i, :] = [ 6. 6. 20. 26.]
287 cord_individual_obj[indivial_i, :] = [ 7. 5. 8. 13.]
288 cord_individual_obj[indivial_i, :] = [ 8. 5. 24. 29.]
289 cord_individual_obj[indivial_i, :] = [ 9. 3. 8. 11.]
290 cord_individual_obj[indivial_i, :] = [10. 4. 38. 42.]
291 cord_individual_obj[indivial_i, :] = [11. 4. 18. 22.]
292 cord_individual_obj[indivial_i, :] = [12. 3. 8. 11.]
293 cord_individual_obj[indivial_i, :] = [13. 4. 12. 16.]
294 cord_individual_obj[indivial_i, :] = [14. 4. 8. 12.]
295 cord_individual_obj[indivial_i, :] = [15. 6. 92. 98.]
296 cord_individual_obj[indivial_i, :] = [16. 6. 8. 14.]
297 cord_individual_obj[indivial_i, :] = [17. 5. 48. 53.]
298 cord_individual_obj[indivial_i, :] = [18. 4. 34. 38.]
299 cord_individual_obj[indivial_i, :] = [19. 3. 92. 95.]
300 cord_individual_obj[indivial_i, :] = [20. 5. 48. 53.]
301 cord_individual_obj[indivial_i, :] = [21. 4. 44. 48.]
302 cord_individual_obj[indivial_i, :] = [22. 4. 40. 44.]
303 cord_individual_obj[indivial_i, :] = [23. 6. 16. 22.]
304 cord_individual_obj[indivial_i, :] = [24. 4. 42. 46.]
305
306 min(cord_individual_obj[:, 3]) = 11.0
307 historl_G_best_iter[iter, 3] = 11.0
308 Begin iteration:
309
310 iter = 9
311 cord_individual_obj[indivial_i, :] = [ 0. 6. 12. 18.]
312 cord_individual_obj[indivial_i, :] = [ 1. 4. 24. 28.]
313 cord_individual_obj[indivial_i, :] = [ 2. 5. 58. 63.]
314 cord_individual_obj[indivial_i, :] = [ 3. 5. 52. 57.]
315 cord_individual_obj[indivial_i, :] = [ 4. 4. 36. 40.]
316 cord_individual_obj[indivial_i, :] = [ 5. 4. 8. 12.]
317 cord_individual_obj[indivial_i, :] = [ 6. 6. 28. 34.]
318 cord_individual_obj[indivial_i, :] = [ 7. 5. 12. 17.]
319 cord_individual_obj[indivial_i, :] = [ 8. 4. 44. 48.]
320 cord_individual_obj[indivial_i, :] = [ 9. 4. 106. 110.]
321 cord_individual_obj[indivial_i, :] = [10. 5. 18. 23.]
322 cord_individual_obj[indivial_i, :] = [11. 4. 12. 16.]
323 cord_individual_obj[indivial_i, :] = [12. 5. 8. 13.]
324 cord_individual_obj[indivial_i, :] = [13. 6. 38. 44.]
325 cord_individual_obj[indivial_i, :] = [14. 5. 12. 17.]
326 cord_individual_obj[indivial_i, :] = [15. 3. 8. 11.]
327 cord_individual_obj[indivial_i, :] = [16. 5. 126. 131.]
328 cord_individual_obj[indivial_i, :] = [17. 5. 24. 29.]
329 cord_individual_obj[indivial_i, :] = [18. 6. 32. 38.]
330 cord_individual_obj[indivial_i, :] = [19. 3. 44. 47.]
331 cord_individual_obj[indivial_i, :] = [20. 4. 18. 22.]

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332     cord_individual_obj[indivial_i, :] = [21. 4. 16. 20.]
333     cord_individual_obj[indivial_i, :] = [22. 4. 26. 30.]
334     cord_individual_obj[indivial_i, :] = [23. 3. 44. 47.]
335     cord_individual_obj[indivial_i, :] = [24. 4. 38. 42.]
336
337     min(cord_individual_obj[:, 3]) = 11.0
338     historl_G_best_iter[iter, 3] = 11.0
339 Begin iteration:
340
341 iter = 10
342     cord_individual_obj[indivial_i, :] = [ 0. 6. 28. 34.]
343     cord_individual_obj[indivial_i, :] = [ 1. 6. 18. 24.]
344     cord_individual_obj[indivial_i, :] = [ 2. 4. 18. 22.]
345     cord_individual_obj[indivial_i, :] = [ 3. 4. 8. 12.]
346     cord_individual_obj[indivial_i, :] = [ 4. 3. 40. 43.]
347     cord_individual_obj[indivial_i, :] = [ 5. 4. 8. 12.]
348     cord_individual_obj[indivial_i, :] = [ 6. 6. 56. 62.]
349     cord_individual_obj[indivial_i, :] = [ 7. 6. 58. 64.]
350     cord_individual_obj[indivial_i, :] = [ 8. 5. 8. 13.]
351     cord_individual_obj[indivial_i, :] = [ 9. 4. 40. 44.]
352     cord_individual_obj[indivial_i, :] = [10. 4. 8. 12.]
353     cord_individual_obj[indivial_i, :] = [11. 4. 76. 80.]
354     cord_individual_obj[indivial_i, :] = [12. 3. 8. 11.]
355     cord_individual_obj[indivial_i, :] = [13. 6. 72. 78.]
356     cord_individual_obj[indivial_i, :] = [14. 5. 8. 13.]
357     cord_individual_obj[indivial_i, :] = [15. 6. 74. 80.]
358     cord_individual_obj[indivial_i, :] = [16. 3. 8. 11.]
359     cord_individual_obj[indivial_i, :] = [17. 6. 28. 34.]
360     cord_individual_obj[indivial_i, :] = [18. 6. 64. 70.]
361     cord_individual_obj[indivial_i, :] = [19. 3. 108. 111.]
362     cord_individual_obj[indivial_i, :] = [20. 4. 72. 76.]
363     cord_individual_obj[indivial_i, :] = [21. 4. 18. 22.]
364     cord_individual_obj[indivial_i, :] = [22. 4. 90. 94.]
365     cord_individual_obj[indivial_i, :] = [23. 4. 50. 54.]
366     cord_individual_obj[indivial_i, :] = [24. 4. 50. 54.]
367
368     min(cord_individual_obj[:, 3]) = 11.0
369     historl_G_best_iter[iter, 3] = 11.0
370 Begin iteration:
371
372 iter = 11
373     cord_individual_obj[indivial_i, :] = [ 0. 5. 62. 67.]
374     cord_individual_obj[indivial_i, :] = [ 1. 4. 44. 48.]
375     cord_individual_obj[indivial_i, :] = [ 2. 5. 32. 37.]
376     cord_individual_obj[indivial_i, :] = [ 3. 4. 90. 94.]
377     cord_individual_obj[indivial_i, :] = [ 4. 4. 50. 54.]
378     cord_individual_obj[indivial_i, :] = [ 5. 4. 8. 12.]
379     cord_individual_obj[indivial_i, :] = [ 6. 6. 16. 22.]
380     cord_individual_obj[indivial_i, :] = [ 7. 5. 8. 13.]
381     cord_individual_obj[indivial_i, :] = [ 8. 4. 12. 16.]
382     cord_individual_obj[indivial_i, :] = [ 9. 4. 122. 126.]
383     cord_individual_obj[indivial_i, :] = [10. 4. 38. 42.]
384     cord_individual_obj[indivial_i, :] = [11. 4. 78. 82.]
385     cord_individual_obj[indivial_i, :] = [12. 4. 32. 36.]
386     cord_individual_obj[indivial_i, :] = [13. 6. 12. 18.]
387     cord_individual_obj[indivial_i, :] = [14. 4. 44. 48.]
388     cord_individual_obj[indivial_i, :] = [15. 4. 52. 56.]
389     cord_individual_obj[indivial_i, :] = [16. 5. 24. 29.]
390     cord_individual_obj[indivial_i, :] = [17. 6. 24. 30.]
391     cord_individual_obj[indivial_i, :] = [18. 4. 38. 42.]
392     cord_individual_obj[indivial_i, :] = [19. 3. 8. 11.]
393     cord_individual_obj[indivial_i, :] = [20. 4. 26. 30.]
394     cord_individual_obj[indivial_i, :] = [21. 4. 38. 42.]
395     cord_individual_obj[indivial_i, :] = [22. 4. 38. 42.]
396     cord_individual_obj[indivial_i, :] = [23. 6. 44. 50.]
397     cord_individual_obj[indivial_i, :] = [24. 4. 62. 66.]
398
399     min(cord_individual_obj[:, 3]) = 11.0
400     historl_G_best_iter[iter, 3] = 11.0
401 Begin iteration:
402
403 iter = 12
404     cord_individual_obj[indivial_i, :] = [ 0. 5. 34. 39.]
405     cord_individual_obj[indivial_i, :] = [ 1. 6. 82. 88.]
406     cord_individual_obj[indivial_i, :] = [ 2. 4. 38. 42.]
407     cord_individual_obj[indivial_i, :] = [ 3. 4. 102. 106.]
408     cord_individual_obj[indivial_i, :] = [ 4. 3. 66. 69.]
409     cord_individual_obj[indivial_i, :] = [ 5. 4. 8. 12.]
410     cord_individual_obj[indivial_i, :] = [ 6. 6. 34. 40.]
411     cord_individual_obj[indivial_i, :] = [ 7. 6. 12. 18.]
412     cord_individual_obj[indivial_i, :] = [ 8. 5. 8. 13.]
413     cord_individual_obj[indivial_i, :] = [ 9. 3. 8. 11.]
414     cord_individual_obj[indivial_i, :] = [10. 4. 18. 22.]
415     cord_individual_obj[indivial_i, :] = [11. 4. 76. 80.]

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416 cord_individual_obj[indivial_i,:] = [12. 5. 32. 37.]
417 cord_individual_obj[indivial_i,:] = [13. 6. 24. 30.]
418 cord_individual_obj[indivial_i,:] = [14. 4. 54. 58.]
419 cord_individual_obj[indivial_i,:] = [15. 6. 16. 22.]
420 cord_individual_obj[indivial_i,:] = [16. 6. 20. 26.]
421 cord_individual_obj[indivial_i,:] = [17. 6. 8. 14.]
422 cord_individual_obj[indivial_i,:] = [18. 6. 62. 68.]
423 cord_individual_obj[indivial_i,:] = [19. 3. 60. 63.]
424 cord_individual_obj[indivial_i,:] = [20. 5. 26. 31.]
425 cord_individual_obj[indivial_i,:] = [21. 4. 44. 48.]
426 cord_individual_obj[indivial_i,:] = [22. 4. 94. 98.]
427 cord_individual_obj[indivial_i,:] = [23. 4. 52. 56.]
428 cord_individual_obj[indivial_i,:] = [24. 4. 62. 66.]
429
430 min(cord_individual_obj[:,3]) = 11.0
431 histol_G_best_iter[iter,3] = 11.0
432 Begin iteration:
433
434 iter = 13
435 cord_individual_obj[indivial_i,:] = [ 0. 6. 8. 14.]
436 cord_individual_obj[indivial_i,:] = [ 1. 4. 12. 16.]
437 cord_individual_obj[indivial_i,:] = [ 2. 5. 32. 37.]
438 cord_individual_obj[indivial_i,:] = [ 3. 3. 8. 11.]
439 cord_individual_obj[indivial_i,:] = [ 4. 4. 24. 28.]
440 cord_individual_obj[indivial_i,:] = [ 5. 4. 8. 12.]
441 cord_individual_obj[indivial_i,:] = [ 6. 5. 22. 27.]
442 cord_individual_obj[indivial_i,:] = [ 7. 5. 8. 13.]
443 cord_individual_obj[indivial_i,:] = [ 8. 4. 8. 12.]
444 cord_individual_obj[indivial_i,:] = [ 9. 4. 74. 78.]
445 cord_individual_obj[indivial_i,:] = [10. 4. 18. 22.]
446 cord_individual_obj[indivial_i,:] = [11. 4. 78. 82.]
447 cord_individual_obj[indivial_i,:] = [12. 5. 32. 37.]
448 cord_individual_obj[indivial_i,:] = [13. 6. 28. 34.]
449 cord_individual_obj[indivial_i,:] = [14. 4. 34. 38.]
450 cord_individual_obj[indivial_i,:] = [15. 4. 100. 104.]
451 cord_individual_obj[indivial_i,:] = [16. 6. 44. 50.]
452 cord_individual_obj[indivial_i,:] = [17. 6. 8. 14.]
453 cord_individual_obj[indivial_i,:] = [18. 5. 38. 43.]
454 cord_individual_obj[indivial_i,:] = [19. 3. 24. 27.]
455 cord_individual_obj[indivial_i,:] = [20. 5. 38. 43.]
456 cord_individual_obj[indivial_i,:] = [21. 5. 40. 45.]
457 cord_individual_obj[indivial_i,:] = [22. 4. 94. 98.]
458 cord_individual_obj[indivial_i,:] = [23. 6. 8. 14.]
459 cord_individual_obj[indivial_i,:] = [24. 4. 62. 66.]
460
461 min(cord_individual_obj[:,3]) = 11.0
462 histol_G_best_iter[iter,3] = 11.0
463 Begin iteration:
464
465 iter = 14
466 cord_individual_obj[indivial_i,:] = [ 0. 6. 16. 22.]
467 cord_individual_obj[indivial_i,:] = [ 1. 6. 24. 30.]
468 cord_individual_obj[indivial_i,:] = [ 2. 5. 38. 43.]
469 cord_individual_obj[indivial_i,:] = [ 3. 4. 102. 106.]
470 cord_individual_obj[indivial_i,:] = [ 4. 3. 58. 61.]
471 cord_individual_obj[indivial_i,:] = [ 5. 4. 12. 16.]
472 cord_individual_obj[indivial_i,:] = [ 6. 5. 22. 27.]
473 cord_individual_obj[indivial_i,:] = [ 7. 6. 8. 14.]
474 cord_individual_obj[indivial_i,:] = [ 8. 5. 8. 13.]
475 cord_individual_obj[indivial_i,:] = [ 9. 4. 82. 86.]
476 cord_individual_obj[indivial_i,:] = [10. 4. 18. 22.]
477 cord_individual_obj[indivial_i,:] = [11. 4. 66. 70.]
478 cord_individual_obj[indivial_i,:] = [12. 5. 32. 37.]
479 cord_individual_obj[indivial_i,:] = [13. 6. 20. 26.]
480 cord_individual_obj[indivial_i,:] = [14. 5. 8. 13.]
481 cord_individual_obj[indivial_i,:] = [15. 3. 8. 11.]
482 cord_individual_obj[indivial_i,:] = [16. 6. 20. 26.]
483 cord_individual_obj[indivial_i,:] = [17. 4. 58. 62.]
484 cord_individual_obj[indivial_i,:] = [18. 6. 56. 62.]
485 cord_individual_obj[indivial_i,:] = [19. 3. 86. 89.]
486 cord_individual_obj[indivial_i,:] = [20. 4. 46. 50.]
487 cord_individual_obj[indivial_i,:] = [21. 4. 36. 40.]
488 cord_individual_obj[indivial_i,:] = [22. 4. 66. 70.]
489 cord_individual_obj[indivial_i,:] = [23. 3. 18. 21.]
490 cord_individual_obj[indivial_i,:] = [24. 4. 62. 66.]
491
492 min(cord_individual_obj[:,3]) = 11.0
493 histol_G_best_iter[iter,3] = 11.0
494 Begin iteration:
495
496 iter = 15
497 cord_individual_obj[indivial_i,:] = [ 0. 6. 8. 14.]
498 cord_individual_obj[indivial_i,:] = [ 1. 6. 74. 80.]
499 cord_individual_obj[indivial_i,:] = [ 2. 4. 32. 36.]

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500 cord_individual_obj[indivial_i,:] = [ 3. 3. 8. 11.]
501 cord_individual_obj[indivial_i,:] = [ 4. 4. 48. 52.]
502 cord_individual_obj[indivial_i,:] = [ 5. 4. 8. 12.]
503 cord_individual_obj[indivial_i,:] = [ 6. 4. 34. 38.]
504 cord_individual_obj[indivial_i,:] = [ 7. 5. 16. 21.]
505 cord_individual_obj[indivial_i,:] = [ 8. 5. 8. 13.]
506 cord_individual_obj[indivial_i,:] = [ 9. 4. 106. 110.]
507 cord_individual_obj[indivial_i,:] = [10. 4. 18. 22.]
508 cord_individual_obj[indivial_i,:] = [11. 4. 136. 140.]
509 cord_individual_obj[indivial_i,:] = [12. 4. 32. 36.]
510 cord_individual_obj[indivial_i,:] = [13. 6. 12. 18.]
511 cord_individual_obj[indivial_i,:] = [14. 4. 8. 12.]
512 cord_individual_obj[indivial_i,:] = [15. 6. 8. 14.]
513 cord_individual_obj[indivial_i,:] = [16. 6. 44. 50.]
514 cord_individual_obj[indivial_i,:] = [17. 4. 52. 56.]
515 cord_individual_obj[indivial_i,:] = [18. 5. 60. 65.]
516 cord_individual_obj[indivial_i,:] = [19. 3. 104. 107.]
517 cord_individual_obj[indivial_i,:] = [20. 5. 46. 51.]
518 cord_individual_obj[indivial_i,:] = [21. 4. 44. 48.]
519 cord_individual_obj[indivial_i,:] = [22. 4. 76. 80.]
520 cord_individual_obj[indivial_i,:] = [23. 6. 8. 14.]
521 cord_individual_obj[indivial_i,:] = [24. 4. 62. 66.]
522
523 min(cord_individual_obj[:, 3]) = 11.0
524 histol_G_best_iter[iter, 3] = 11.0
525 Begin iteration:
526
527 iter = 16
528 cord_individual_obj[indivial_i,:] = [ 0. 6. 8. 14.]
529 cord_individual_obj[indivial_i,:] = [ 1. 4. 30. 34.]
530 cord_individual_obj[indivial_i,:] = [ 2. 4. 48. 52.]
531 cord_individual_obj[indivial_i,:] = [ 3. 4. 102. 106.]
532 cord_individual_obj[indivial_i,:] = [ 4. 3. 54. 57.]
533 cord_individual_obj[indivial_i,:] = [ 5. 4. 8. 12.]
534 cord_individual_obj[indivial_i,:] = [ 6. 6. 44. 50.]
535 cord_individual_obj[indivial_i,:] = [ 7. 5. 8. 13.]
536 cord_individual_obj[indivial_i,:] = [ 8. 5. 8. 13.]
537 cord_individual_obj[indivial_i,:] = [ 9. 5. 100. 105.]
538 cord_individual_obj[indivial_i,:] = [10. 4. 18. 22.]
539 cord_individual_obj[indivial_i,:] = [11. 3. 8. 11.]
540 cord_individual_obj[indivial_i,:] = [12. 5. 32. 37.]
541 cord_individual_obj[indivial_i,:] = [13. 6. 12. 18.]
542 cord_individual_obj[indivial_i,:] = [14. 4. 8. 12.]
543 cord_individual_obj[indivial_i,:] = [15. 5. 16. 21.]
544 cord_individual_obj[indivial_i,:] = [16. 6. 64. 70.]
545 cord_individual_obj[indivial_i,:] = [17. 4. 40. 44.]
546 cord_individual_obj[indivial_i,:] = [18. 4. 56. 60.]
547 cord_individual_obj[indivial_i,:] = [19. 3. 74. 77.]
548 cord_individual_obj[indivial_i,:] = [20. 5. 84. 89.]
549 cord_individual_obj[indivial_i,:] = [21. 4. 128. 132.]
550 cord_individual_obj[indivial_i,:] = [22. 4. 66. 70.]
551 cord_individual_obj[indivial_i,:] = [23. 6. 8. 14.]
552 cord_individual_obj[indivial_i,:] = [24. 4. 52. 56.]
553
554 min(cord_individual_obj[:, 3]) = 11.0
555 histol_G_best_iter[iter, 3] = 11.0
556 Begin iteration:
557
558 iter = 17
559 cord_individual_obj[indivial_i,:] = [ 0. 5. 24. 29.]
560 cord_individual_obj[indivial_i,:] = [ 1. 6. 8. 14.]
561 cord_individual_obj[indivial_i,:] = [ 2. 3. 38. 41.]
562 cord_individual_obj[indivial_i,:] = [ 3. 3. 90. 93.]
563 cord_individual_obj[indivial_i,:] = [ 4. 4. 24. 28.]
564 cord_individual_obj[indivial_i,:] = [ 5. 4. 12. 16.]
565 cord_individual_obj[indivial_i,:] = [ 6. 6. 44. 50.]
566 cord_individual_obj[indivial_i,:] = [ 7. 5. 8. 13.]
567 cord_individual_obj[indivial_i,:] = [ 8. 5. 8. 13.]
568 cord_individual_obj[indivial_i,:] = [ 9. 4. 110. 114.]
569 cord_individual_obj[indivial_i,:] = [10. 4. 26. 30.]
570 cord_individual_obj[indivial_i,:] = [11. 4. 18. 22.]
571 cord_individual_obj[indivial_i,:] = [12. 5. 32. 37.]
572 cord_individual_obj[indivial_i,:] = [13. 6. 12. 18.]
573 cord_individual_obj[indivial_i,:] = [14. 4. 8. 12.]
574 cord_individual_obj[indivial_i,:] = [15. 6. 56. 62.]
575 cord_individual_obj[indivial_i,:] = [16. 5. 56. 61.]
576 cord_individual_obj[indivial_i,:] = [17. 6. 28. 34.]
577 cord_individual_obj[indivial_i,:] = [18. 5. 26. 31.]
578 cord_individual_obj[indivial_i,:] = [19. 3. 66. 69.]
579 cord_individual_obj[indivial_i,:] = [20. 5. 36. 41.]
580 cord_individual_obj[indivial_i,:] = [21. 3. 8. 11.]
581 cord_individual_obj[indivial_i,:] = [22. 4. 92. 96.]
582 cord_individual_obj[indivial_i,:] = [23. 6. 8. 14.]
583 cord_individual_obj[indivial_i,:] = [24. 4. 62. 66.]

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```

584
585 min(cord_individual_obj[:, 3]) = 11.0
586 historl_G_best_iter[iter, 3] = 11.0
587 Begin iteration:
588
589 iter = 18
590 cord_individual_obj[indivial_i, :] = [ 0.  5. 36. 41.]
591 cord_individual_obj[indivial_i, :] = [ 1.  4.  8. 12.]
592 cord_individual_obj[indivial_i, :] = [ 2.  4. 32. 36.]
593 cord_individual_obj[indivial_i, :] = [ 3.  4. 80. 84.]
594 cord_individual_obj[indivial_i, :] = [ 4.  3. 56. 59.]
595 cord_individual_obj[indivial_i, :] = [ 5.  4. 12. 16.]
596 cord_individual_obj[indivial_i, :] = [ 6.  5. 44. 49.]
597 cord_individual_obj[indivial_i, :] = [ 7.  6. 18. 24.]
598 cord_individual_obj[indivial_i, :] = [ 8.  5. 8. 13.]
599 cord_individual_obj[indivial_i, :] = [ 9.  3. 8. 11.]
600 cord_individual_obj[indivial_i, :] = [10.  5. 18. 23.]
601 cord_individual_obj[indivial_i, :] = [11.  4. 60. 64.]
602 cord_individual_obj[indivial_i, :] = [12.  3. 32. 35.]
603 cord_individual_obj[indivial_i, :] = [13.  6. 52. 58.]
604 cord_individual_obj[indivial_i, :] = [14.  4. 8. 12.]
605 cord_individual_obj[indivial_i, :] = [15.  4. 16. 20.]
606 cord_individual_obj[indivial_i, :] = [16.  5. 46. 51.]
607 cord_individual_obj[indivial_i, :] = [17.  6. 12. 18.]
608 cord_individual_obj[indivial_i, :] = [18.  5. 38. 43.]
609 cord_individual_obj[indivial_i, :] = [19.  3. 44. 47.]
610 cord_individual_obj[indivial_i, :] = [20.  4. 128. 132.]
611 cord_individual_obj[indivial_i, :] = [21.  3. 68. 71.]
612 cord_individual_obj[indivial_i, :] = [22.  4. 90. 94.]
613 cord_individual_obj[indivial_i, :] = [23.  4. 8. 12.]
614 cord_individual_obj[indivial_i, :] = [24.  4. 62. 66.]
615
616 min(cord_individual_obj[:, 3]) = 11.0
617 historl_G_best_iter[iter, 3] = 11.0
618 Begin iteration:
619
620 iter = 19
621 cord_individual_obj[indivial_i, :] = [ 0.  6. 8. 14.]
622 cord_individual_obj[indivial_i, :] = [ 1.  4. 84. 88.]
623 cord_individual_obj[indivial_i, :] = [ 2.  5. 56. 61.]
624 cord_individual_obj[indivial_i, :] = [ 3.  4. 90. 94.]
625 cord_individual_obj[indivial_i, :] = [ 4.  4. 46. 50.]
626 cord_individual_obj[indivial_i, :] = [ 5.  4. 8. 12.]
627 cord_individual_obj[indivial_i, :] = [ 6.  5. 22. 27.]
628 cord_individual_obj[indivial_i, :] = [ 7.  5. 22. 27.]
629 cord_individual_obj[indivial_i, :] = [ 8.  5. 8. 13.]
630 cord_individual_obj[indivial_i, :] = [ 9.  4. 126. 130.]
631 cord_individual_obj[indivial_i, :] = [10.  4. 18. 22.]
632 cord_individual_obj[indivial_i, :] = [11.  4. 94. 98.]
633 cord_individual_obj[indivial_i, :] = [12.  4. 32. 36.]
634 cord_individual_obj[indivial_i, :] = [13.  6. 12. 18.]
635 cord_individual_obj[indivial_i, :] = [14.  4. 8. 12.]
636 cord_individual_obj[indivial_i, :] = [15.  5. 32. 37.]
637 cord_individual_obj[indivial_i, :] = [16.  6. 26. 32.]
638 cord_individual_obj[indivial_i, :] = [17.  6. 8. 14.]
639 cord_individual_obj[indivial_i, :] = [18.  6. 32. 38.]
640 cord_individual_obj[indivial_i, :] = [19.  3. 98. 101.]
641 cord_individual_obj[indivial_i, :] = [20.  3. 8. 11.]
642 cord_individual_obj[indivial_i, :] = [21.  3. 44. 47.]
643 cord_individual_obj[indivial_i, :] = [22.  4. 82. 86.]
644 cord_individual_obj[indivial_i, :] = [23.  6. 8. 14.]
645 cord_individual_obj[indivial_i, :] = [24.  4. 62. 66.]
646
647 min(cord_individual_obj[:, 3]) = 11.0
648 historl_G_best_iter[iter, 3] = 11.0
649 Begin iteration:
650
651 iter = 20
652 cord_individual_obj[indivial_i, :] = [ 0.  5. 30. 35.]
653 cord_individual_obj[indivial_i, :] = [ 1.  4. 30. 34.]
654 cord_individual_obj[indivial_i, :] = [ 2.  3. 38. 41.]
655 cord_individual_obj[indivial_i, :] = [ 3.  5. 80. 85.]
656 cord_individual_obj[indivial_i, :] = [ 4.  3. 60. 63.]
657 cord_individual_obj[indivial_i, :] = [ 5.  4. 8. 12.]
658 cord_individual_obj[indivial_i, :] = [ 6.  6. 34. 40.]
659 cord_individual_obj[indivial_i, :] = [ 7.  6. 28. 34.]
660 cord_individual_obj[indivial_i, :] = [ 8.  5. 8. 13.]
661 cord_individual_obj[indivial_i, :] = [ 9.  3. 8. 11.]
662 cord_individual_obj[indivial_i, :] = [10.  4. 26. 30.]
663 cord_individual_obj[indivial_i, :] = [11.  4. 92. 96.]
664 cord_individual_obj[indivial_i, :] = [12.  3. 32. 35.]
665 cord_individual_obj[indivial_i, :] = [13.  6. 12. 18.]
666 cord_individual_obj[indivial_i, :] = [14.  4. 8. 12.]
667 cord_individual_obj[indivial_i, :] = [15.  6. 34. 40.]

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668 cord_individual_obj[indivial_i, :] = [16. 5. 56. 61.]
669 cord_individual_obj[indivial_i, :] = [17. 6. 8. 14.]
670 cord_individual_obj[indivial_i, :] = [18. 4. 48. 52.]
671 cord_individual_obj[indivial_i, :] = [19. 3. 64. 67.]
672 cord_individual_obj[indivial_i, :] = [20. 4. 18. 22.]
673 cord_individual_obj[indivial_i, :] = [21. 3. 60. 63.]
674 cord_individual_obj[indivial_i, :] = [22. 4. 92. 96.]
675 cord_individual_obj[indivial_i, :] = [23. 3. 18. 21.]
676 cord_individual_obj[indivial_i, :] = [24. 4. 50. 54.]
677
678 min(cord_individual_obj[:, 3]) = 11.0
679 historl_G_best_iter[iter, 3] = 11.0
680 Iteration calculate over
681
682
683
684
685 All item are in Bin and:
686 Bin area = 1080
687 Real_area = 87.0
688 Proportion_of_area = 0.08055555555555556
689 BEST_CHROM =
690     berth: [14.5 26. 20. 2.5 6.5 10. ]
691     time: [0. 0. 0. 0. 0. ]
692     num_QC: [2. 2. 4. 4. 3. 3.]
693 Objective function values and some other indicators:
694 Obj0 = 3.00          Obj1 = 8.00          Obj0 + Obj1 = 11.00
695 Total movement of crane: 8.00
696 Total waiting time in berth position: 0.00
697 Total index of q during berthing: 581.00
698 Specific arrangement for each vessel:
699
700
701
702
703
704
705
706 Algorithm finished and the total CPU time: 171 s
707 End
708

```