

unknown

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80 cord_individual_obj[indivial_i,:] = [16. 4. 42. 46.]
81 cord_individual_obj[indivial_i,:] = [17. 4. 14. 18.]
82 cord_individual_obj[indivial_i,:] = [18. 3. 36. 39.]
83 cord_individual_obj[indivial_i,:] = [19. 6. 20. 26.]
84 cord_individual_obj[indivial_i,:] = [20. 3. 26. 29.]
85 cord_individual_obj[indivial_i,:] = [21. 4. 20. 24.]
86 cord_individual_obj[indivial_i,:] = [22. 3. 32. 35.]
87 cord_individual_obj[indivial_i,:] = [23. 4. 20. 24.]
88 cord_individual_obj[indivial_i,:] = [24. 4. 132. 136.]
89
90 min(cord_individual_obj[:,3]) = 5.0
91 historl_G_best_iter[iter,3] = 5.0
92 Begin iteration:
93
94 iter = 2
95 cord_individual_obj[indivial_i,:] = [0. 3. 6. 9.]
96 cord_individual_obj[indivial_i,:] = [1. 4. 10. 14.]
97 cord_individual_obj[indivial_i,:] = [2. 3. 60. 63.]
98 cord_individual_obj[indivial_i,:] = [3. 4. 50. 54.]
99 cord_individual_obj[indivial_i,:] = [4. 4. 68. 72.]
100 cord_individual_obj[indivial_i,:] = [5. 4. 39. 43.]
101 cord_individual_obj[indivial_i,:] = [6. 4. 32. 36.]
102 cord_individual_obj[indivial_i,:] = [7. 4. 50. 54.]
103 cord_individual_obj[indivial_i,:] = [8. 3. 152. 155.]
104 cord_individual_obj[indivial_i,:] = [9. 3. 72. 75.]
105 cord_individual_obj[indivial_i,:] = [10. 3. 104. 107.]
106 cord_individual_obj[indivial_i,:] = [11. 6. 3. 9.]
107 cord_individual_obj[indivial_i,:] = [12. 4. 32. 36.]
108 cord_individual_obj[indivial_i,:] = [13. 4. 34. 38.]
109 cord_individual_obj[indivial_i,:] = [14. 4. 50. 54.]
110 cord_individual_obj[indivial_i,:] = [15. 4. 18. 22.]
111 cord_individual_obj[indivial_i,:] = [16. 3. 34. 37.]
112 cord_individual_obj[indivial_i,:] = [17. 4. 20. 24.]
113 cord_individual_obj[indivial_i,:] = [18. 3. 32. 35.]
114 cord_individual_obj[indivial_i,:] = [19. 5. 18. 23.]
115 cord_individual_obj[indivial_i,:] = [20. 4. 59. 63.]
116 cord_individual_obj[indivial_i,:] = [21. 3. 18. 21.]
117 cord_individual_obj[indivial_i,:] = [22. 3. 108. 111.]
118 cord_individual_obj[indivial_i,:] = [23. 4. 33. 37.]
119 cord_individual_obj[indivial_i,:] = [24. 3. 2. 5.]
120
121 min(cord_individual_obj[:,3]) = 5.0
122 historl_G_best_iter[iter,3] = 5.0
123 Begin iteration:
124
125 iter = 3
126 cord_individual_obj[indivial_i,:] = [0. 3. 15. 18.]
127 cord_individual_obj[indivial_i,:] = [1. 4. 6. 10.]
128 cord_individual_obj[indivial_i,:] = [2. 4. 11. 15.]
129 cord_individual_obj[indivial_i,:] = [3. 3. 60. 63.]
130 cord_individual_obj[indivial_i,:] = [4. 2. 49. 51.]
131 cord_individual_obj[indivial_i,:] = [5. 4. 61. 65.]
132 cord_individual_obj[indivial_i,:] = [6. 5. 18. 23.]
133 cord_individual_obj[indivial_i,:] = [7. 3. 4. 7.]
134 cord_individual_obj[indivial_i,:] = [8. 3. 2. 5.]
135 cord_individual_obj[indivial_i,:] = [9. 3. 24. 27.]
136 cord_individual_obj[indivial_i,:] = [10. 3. 50. 53.]
137 cord_individual_obj[indivial_i,:] = [11. 6. 52. 58.]
138 cord_individual_obj[indivial_i,:] = [12. 3. 42. 45.]
139 cord_individual_obj[indivial_i,:] = [13. 6. 2. 8.]
140 cord_individual_obj[indivial_i,:] = [14. 6. 35. 41.]
141 cord_individual_obj[indivial_i,:] = [15. 4. 60. 64.]
142 cord_individual_obj[indivial_i,:] = [16. 6. 18. 24.]
143 cord_individual_obj[indivial_i,:] = [17. 4. 132. 136.]
144 cord_individual_obj[indivial_i,:] = [18. 3. 24. 27.]
145 cord_individual_obj[indivial_i,:] = [19. 6. 12. 18.]
146 cord_individual_obj[indivial_i,:] = [20. 3. 3. 6.]
147 cord_individual_obj[indivial_i,:] = [21. 6. 88. 94.]
148 cord_individual_obj[indivial_i,:] = [22. 3. 3. 6.]
149 cord_individual_obj[indivial_i,:] = [23. 5. 40. 45.]
150 cord_individual_obj[indivial_i,:] = [24. 4. 50. 54.]
151
152 min(cord_individual_obj[:,3]) = 5.0
153 historl_G_best_iter[iter,3] = 5.0
154 Begin iteration:
155
156 iter = 4
157 cord_individual_obj[indivial_i,:] = [0. 4. 6. 10.]
158 cord_individual_obj[indivial_i,:] = [1. 2. 20. 22.]
159 cord_individual_obj[indivial_i,:] = [2. 6. 98. 104.]
160 cord_individual_obj[indivial_i,:] = [3. 5. 34. 39.]
161 cord_individual_obj[indivial_i,:] = [4. 2. 61. 63.]
162 cord_individual_obj[indivial_i,:] = [5. 4. 61. 65.]
163 cord_individual_obj[indivial_i,:] = [6. 6. 3. 9.]

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164 cord_individual_obj[indivial_i,:] = [7. 4. 4. 8.]
165 cord_individual_obj[indivial_i,:] = [ 8. 4. 152. 156.]
166 cord_individual_obj[indivial_i,:] = [ 9. 5. 9. 14.]
167 cord_individual_obj[indivial_i,:] = [10. 4. 19. 23.]
168 cord_individual_obj[indivial_i,:] = [11. 4. 50. 54.]
169 cord_individual_obj[indivial_i,:] = [12. 5. 20. 25.]
170 cord_individual_obj[indivial_i,:] = [13. 6. 6. 12.]
171 cord_individual_obj[indivial_i,:] = [14. 4. 72. 76.]
172 cord_individual_obj[indivial_i,:] = [15. 3. 34. 37.]
173 cord_individual_obj[indivial_i,:] = [16. 4. 74. 78.]
174 cord_individual_obj[indivial_i,:] = [17. 3. 2. 5.]
175 cord_individual_obj[indivial_i,:] = [18. 3. 42. 45.]
176 cord_individual_obj[indivial_i,:] = [19. 8. 2. 10.]
177 cord_individual_obj[indivial_i,:] = [20. 3. 32. 35.]
178 cord_individual_obj[indivial_i,:] = [21. 4. 68. 72.]
179 cord_individual_obj[indivial_i,:] = [22. 2. 81. 83.]
180 cord_individual_obj[indivial_i,:] = [23. 6. 5. 11.]
181 cord_individual_obj[indivial_i,:] = [24. 2. 28. 30.]
182
183 min(cord_individual_obj[:,3]) = 5.0
184 historl_G_best_iter[iter,3] = 5.0
185 Begin iteration:
186
187 iter = 5
188 cord_individual_obj[indivial_i,:] = [ 0. 3. 15. 18.]
189 cord_individual_obj[indivial_i,:] = [ 1. 3. 108. 111.]
190 cord_individual_obj[indivial_i,:] = [ 2. 4. 33. 37.]
191 cord_individual_obj[indivial_i,:] = [ 3. 3. 32. 35.]
192 cord_individual_obj[indivial_i,:] = [ 4. 3. 62. 65.]
193 cord_individual_obj[indivial_i,:] = [ 5. 3. 46. 49.]
194 cord_individual_obj[indivial_i,:] = [ 6. 4. 50. 54.]
195 cord_individual_obj[indivial_i,:] = [ 7. 4. 20. 24.]
196 cord_individual_obj[indivial_i,:] = [ 8. 3. 2. 5.]
197 cord_individual_obj[indivial_i,:] = [ 9. 3. 114. 117.]
198 cord_individual_obj[indivial_i,:] = [10. 4. 99. 103.]
199 cord_individual_obj[indivial_i,:] = [11. 3. 31. 34.]
200 cord_individual_obj[indivial_i,:] = [12. 3. 32. 35.]
201 cord_individual_obj[indivial_i,:] = [13. 6. 68. 74.]
202 cord_individual_obj[indivial_i,:] = [14. 4. 44. 48.]
203 cord_individual_obj[indivial_i,:] = [15. 4. 34. 38.]
204 cord_individual_obj[indivial_i,:] = [16. 3. 9. 12.]
205 cord_individual_obj[indivial_i,:] = [17. 3. 26. 29.]
206 cord_individual_obj[indivial_i,:] = [18. 3. 10. 13.]
207 cord_individual_obj[indivial_i,:] = [19. 6. 20. 26.]
208 cord_individual_obj[indivial_i,:] = [20. 3. 32. 35.]
209 cord_individual_obj[indivial_i,:] = [21. 3. 68. 71.]
210 cord_individual_obj[indivial_i,:] = [22. 4. 51. 55.]
211 cord_individual_obj[indivial_i,:] = [23. 6. 19. 25.]
212 cord_individual_obj[indivial_i,:] = [24. 2. 101. 103.]
213
214 min(cord_individual_obj[:,3]) = 5.0
215 historl_G_best_iter[iter,3] = 5.0
216 Begin iteration:
217
218 iter = 6
219 cord_individual_obj[indivial_i,:] = [0. 3. 6. 9.]
220 cord_individual_obj[indivial_i,:] = [ 1. 3. 10. 13.]
221 cord_individual_obj[indivial_i,:] = [ 2. 4. 35. 39.]
222 cord_individual_obj[indivial_i,:] = [ 3. 4. 34. 38.]
223 cord_individual_obj[indivial_i,:] = [ 4. 4. 123. 127.]
224 cord_individual_obj[indivial_i,:] = [ 5. 3. 73. 76.]
225 cord_individual_obj[indivial_i,:] = [ 6. 4. 56. 60.]
226 cord_individual_obj[indivial_i,:] = [ 7. 3. 3. 6.]
227 cord_individual_obj[indivial_i,:] = [ 8. 4. 92. 96.]
228 cord_individual_obj[indivial_i,:] = [ 9. 3. 2. 5.]
229 cord_individual_obj[indivial_i,:] = [10. 4. 2. 6.]
230 cord_individual_obj[indivial_i,:] = [11. 4. 90. 94.]
231 cord_individual_obj[indivial_i,:] = [12. 4. 10. 14.]
232 cord_individual_obj[indivial_i,:] = [13. 8. 110. 118.]
233 cord_individual_obj[indivial_i,:] = [14. 4. 51. 55.]
234 cord_individual_obj[indivial_i,:] = [15. 4. 32. 36.]
235 cord_individual_obj[indivial_i,:] = [16. 3. 80. 83.]
236 cord_individual_obj[indivial_i,:] = [17. 6. 146. 152.]
237 cord_individual_obj[indivial_i,:] = [18. 3. 24. 27.]
238 cord_individual_obj[indivial_i,:] = [19. 7. 9. 16.]
239 cord_individual_obj[indivial_i,:] = [20. 3. 34. 37.]
240 cord_individual_obj[indivial_i,:] = [21. 4. 5. 9.]
241 cord_individual_obj[indivial_i,:] = [22. 4. 42. 46.]
242 cord_individual_obj[indivial_i,:] = [23. 6. 21. 27.]
243 cord_individual_obj[indivial_i,:] = [24. 5. 25. 30.]
244
245 min(cord_individual_obj[:,3]) = 5.0
246 historl_G_best_iter[iter,3] = 5.0
247 Begin iteration:

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248
249 iter = 7
250 cord_individual_obj[indivial_i, :] = [ 0. 4. 7. 11.]
251 cord_individual_obj[indivial_i, :] = [ 1. 4. 98. 102.]
252 cord_individual_obj[indivial_i, :] = [ 2. 3. 60. 63.]
253 cord_individual_obj[indivial_i, :] = [ 3. 3. 58. 61.]
254 cord_individual_obj[indivial_i, :] = [ 4. 3. 132. 135.]
255 cord_individual_obj[indivial_i, :] = [ 5. 3. 54. 57.]
256 cord_individual_obj[indivial_i, :] = [ 6. 4. 3. 7.]
257 cord_individual_obj[indivial_i, :] = [ 7. 4. 20. 24.]
258 cord_individual_obj[indivial_i, :] = [ 8. 3. 2. 5.]
259 cord_individual_obj[indivial_i, :] = [ 9. 3. 72. 75.]
260 cord_individual_obj[indivial_i, :] = [ 10. 4. 99. 103.]
261 cord_individual_obj[indivial_i, :] = [ 11. 5. 33. 38.]
262 cord_individual_obj[indivial_i, :] = [ 12. 4. 8. 12.]
263 cord_individual_obj[indivial_i, :] = [ 13. 5. 10. 15.]
264 cord_individual_obj[indivial_i, :] = [ 14. 4. 60. 64.]
265 cord_individual_obj[indivial_i, :] = [ 15. 3. 33. 36.]
266 cord_individual_obj[indivial_i, :] = [ 16. 3. 18. 21.]
267 cord_individual_obj[indivial_i, :] = [ 17. 3. 2. 5.]
268 cord_individual_obj[indivial_i, :] = [ 18. 3. 68. 71.]
269 cord_individual_obj[indivial_i, :] = [ 19. 4. 53. 57.]
270 cord_individual_obj[indivial_i, :] = [ 20. 3. 32. 35.]
271 cord_individual_obj[indivial_i, :] = [ 21. 3. 42. 45.]
272 cord_individual_obj[indivial_i, :] = [ 22. 3. 80. 83.]
273 cord_individual_obj[indivial_i, :] = [ 23. 5. 33. 38.]
274 cord_individual_obj[indivial_i, :] = [ 24. 4. 2. 6.]
275

276 min(cord_individual_obj[:, 3]) = 5.0
277 historl_G_best_iter[iter, 3] = 5.0
278 Begin iteration:
279
280 iter = 8
281 cord_individual_obj[indivial_i, :] = [ 0. 3. 14. 17.]
282 cord_individual_obj[indivial_i, :] = [ 1. 3. 56. 59.]
283 cord_individual_obj[indivial_i, :] = [ 2. 2. 91. 93.]
284 cord_individual_obj[indivial_i, :] = [ 3. 3. 50. 53.]
285 cord_individual_obj[indivial_i, :] = [ 4. 3. 2. 5.]
286 cord_individual_obj[indivial_i, :] = [ 5. 3. 14. 17.]
287 cord_individual_obj[indivial_i, :] = [ 6. 2. 40. 42.]
288 cord_individual_obj[indivial_i, :] = [ 7. 3. 50. 53.]
289 cord_individual_obj[indivial_i, :] = [ 8. 3. 2. 5.]
290 cord_individual_obj[indivial_i, :] = [ 9. 3. 80. 83.]
291 cord_individual_obj[indivial_i, :] = [ 10. 5. 19. 24.]
292 cord_individual_obj[indivial_i, :] = [ 11. 4. 32. 36.]
293 cord_individual_obj[indivial_i, :] = [ 12. 3. 108. 111.]
294 cord_individual_obj[indivial_i, :] = [ 13. 3. 26. 29.]
295 cord_individual_obj[indivial_i, :] = [ 14. 4. 73. 77.]
296 cord_individual_obj[indivial_i, :] = [ 15. 3. 74. 77.]
297 cord_individual_obj[indivial_i, :] = [ 16. 4. 32. 36.]
298 cord_individual_obj[indivial_i, :] = [ 17. 4. 2. 6.]
299 cord_individual_obj[indivial_i, :] = [ 18. 3. 40. 43.]
300 cord_individual_obj[indivial_i, :] = [ 19. 3. 31. 34.]
301 cord_individual_obj[indivial_i, :] = [ 20. 3. 74. 77.]
302 cord_individual_obj[indivial_i, :] = [ 21. 3. 42. 45.]
303 cord_individual_obj[indivial_i, :] = [ 22. 3. 32. 35.]
304 cord_individual_obj[indivial_i, :] = [ 23. 3. 31. 34.]
305 cord_individual_obj[indivial_i, :] = [ 24. 3. 50. 53.]
306

307 min(cord_individual_obj[:, 3]) = 5.0
308 historl_G_best_iter[iter, 3] = 5.0
309 Begin iteration:
310
311 iter = 9
312 cord_individual_obj[indivial_i, :] = [ 0. 3. 28. 31.]
313 cord_individual_obj[indivial_i, :] = [ 1. 3. 58. 61.]
314 cord_individual_obj[indivial_i, :] = [ 2. 4. 114. 118.]
315 cord_individual_obj[indivial_i, :] = [ 3. 4. 20. 24.]
316 cord_individual_obj[indivial_i, :] = [ 4. 3. 62. 65.]
317 cord_individual_obj[indivial_i, :] = [ 5. 3. 24. 27.]
318 cord_individual_obj[indivial_i, :] = [ 6. 4. 14. 18.]
319 cord_individual_obj[indivial_i, :] = [ 7. 3. 4. 7.]
320 cord_individual_obj[indivial_i, :] = [ 8. 3. 2. 5.]
321 cord_individual_obj[indivial_i, :] = [ 9. 3. 2. 5.]
322 cord_individual_obj[indivial_i, :] = [ 10. 6. 9. 15.]
323 cord_individual_obj[indivial_i, :] = [ 11. 5. 14. 19.]
324 cord_individual_obj[indivial_i, :] = [ 12. 3. 2. 5.]
325 cord_individual_obj[indivial_i, :] = [ 13. 4. 14. 18.]
326 cord_individual_obj[indivial_i, :] = [ 14. 4. 73. 77.]
327 cord_individual_obj[indivial_i, :] = [ 15. 4. 21. 25.]
328 cord_individual_obj[indivial_i, :] = [ 16. 3. 61. 64.]
329 cord_individual_obj[indivial_i, :] = [ 17. 6. 50. 56.]
330 cord_individual_obj[indivial_i, :] = [ 18. 4. 4. 8.]
331 cord_individual_obj[indivial_i, :] = [ 19. 6. 20. 26.]

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332     cord_individual_obj[indivial_i, :] = [20. 3. 34. 37.]
333     cord_individual_obj[indivial_i, :] = [21. 4. 70. 74.]
334     cord_individual_obj[indivial_i, :] = [22. 4. 44. 48.]
335     cord_individual_obj[indivial_i, :] = [23. 4. 19. 23.]
336     cord_individual_obj[indivial_i, :] = [24. 5. 15. 20.]
337
338     min(cord_individual_obj[:, 3]) = 5.0
339     historl_G_best_iter[iter, 3] = 5.0
340 Begin iteration:
341
342 iter = 10
343     cord_individual_obj[indivial_i, :] = [ 0. 3. 32. 35.]
344     cord_individual_obj[indivial_i, :] = [ 1. 3. 96. 99.]
345     cord_individual_obj[indivial_i, :] = [2. 3. 2. 5.]
346     cord_individual_obj[indivial_i, :] = [ 3. 3. 44. 47.]
347     cord_individual_obj[indivial_i, :] = [ 4. 6. 90. 96.]
348     cord_individual_obj[indivial_i, :] = [ 5. 3. 6. 9.]
349     cord_individual_obj[indivial_i, :] = [ 6. 3. 32. 35.]
350     cord_individual_obj[indivial_i, :] = [ 7. 3. 6. 9.]
351     cord_individual_obj[indivial_i, :] = [ 8. 4. 73. 77.]
352     cord_individual_obj[indivial_i, :] = [ 9. 4. 60. 64.]
353     cord_individual_obj[indivial_i, :] = [10. 3. 2. 5.]
354     cord_individual_obj[indivial_i, :] = [11. 3. 32. 35.]
355     cord_individual_obj[indivial_i, :] = [12. 3. 168. 171.]
356     cord_individual_obj[indivial_i, :] = [13. 4. 43. 47.]
357     cord_individual_obj[indivial_i, :] = [14. 7. 3. 10.]
358     cord_individual_obj[indivial_i, :] = [15. 3. 62. 65.]
359     cord_individual_obj[indivial_i, :] = [16. 3. 50. 53.]
360     cord_individual_obj[indivial_i, :] = [17. 4. 50. 54.]
361     cord_individual_obj[indivial_i, :] = [18. 3. 20. 23.]
362     cord_individual_obj[indivial_i, :] = [19. 3. 74. 77.]
363     cord_individual_obj[indivial_i, :] = [20. 3. 60. 63.]
364     cord_individual_obj[indivial_i, :] = [21. 4. 96. 100.]
365     cord_individual_obj[indivial_i, :] = [22. 3. 68. 71.]
366     cord_individual_obj[indivial_i, :] = [23. 2. 31. 33.]
367     cord_individual_obj[indivial_i, :] = [24. 4. 50. 54.]
368
369     min(cord_individual_obj[:, 3]) = 5.0
370     historl_G_best_iter[iter, 3] = 5.0
371 Begin iteration:
372
373 iter = 11
374     cord_individual_obj[indivial_i, :] = [0. 3. 5. 8.]
375     cord_individual_obj[indivial_i, :] = [ 1. 2. 10. 12.]
376     cord_individual_obj[indivial_i, :] = [ 2. 2. 108. 110.]
377     cord_individual_obj[indivial_i, :] = [ 3. 3. 10. 13.]
378     cord_individual_obj[indivial_i, :] = [ 4. 3. 104. 107.]
379     cord_individual_obj[indivial_i, :] = [ 5. 3. 6. 9.]
380     cord_individual_obj[indivial_i, :] = [ 6. 4. 42. 46.]
381     cord_individual_obj[indivial_i, :] = [ 7. 3. 6. 9.]
382     cord_individual_obj[indivial_i, :] = [ 8. 3. 2. 5.]
383     cord_individual_obj[indivial_i, :] = [ 9. 3. 50. 53.]
384     cord_individual_obj[indivial_i, :] = [10. 4. 2. 6.]
385     cord_individual_obj[indivial_i, :] = [11. 4. 3. 7.]
386     cord_individual_obj[indivial_i, :] = [12. 3. 2. 5.]
387     cord_individual_obj[indivial_i, :] = [13. 4. 27. 31.]
388     cord_individual_obj[indivial_i, :] = [14. 4. 51. 55.]
389     cord_individual_obj[indivial_i, :] = [15. 3. 58. 61.]
390     cord_individual_obj[indivial_i, :] = [16. 2. 88. 90.]
391     cord_individual_obj[indivial_i, :] = [17. 4. 79. 83.]
392     cord_individual_obj[indivial_i, :] = [18. 3. 34. 37.]
393     cord_individual_obj[indivial_i, :] = [19. 4. 40. 44.]
394     cord_individual_obj[indivial_i, :] = [20. 3. 8. 11.]
395     cord_individual_obj[indivial_i, :] = [21. 6. 35. 41.]
396     cord_individual_obj[indivial_i, :] = [22. 4. 32. 36.]
397     cord_individual_obj[indivial_i, :] = [23. 3. 32. 35.]
398     cord_individual_obj[indivial_i, :] = [24. 3. 94. 97.]
399
400     min(cord_individual_obj[:, 3]) = 5.0
401     historl_G_best_iter[iter, 3] = 5.0
402 Begin iteration:
403
404 iter = 12
405     cord_individual_obj[indivial_i, :] = [ 0. 3. 50. 53.]
406     cord_individual_obj[indivial_i, :] = [ 1. 3. 106. 109.]
407     cord_individual_obj[indivial_i, :] = [2. 3. 2. 5.]
408     cord_individual_obj[indivial_i, :] = [ 3. 3. 44. 47.]
409     cord_individual_obj[indivial_i, :] = [ 4. 4. 86. 90.]
410     cord_individual_obj[indivial_i, :] = [ 5. 3. 6. 9.]
411     cord_individual_obj[indivial_i, :] = [ 6. 4. 50. 54.]
412     cord_individual_obj[indivial_i, :] = [ 7. 3. 44. 47.]
413     cord_individual_obj[indivial_i, :] = [ 8. 4. 2. 6.]
414     cord_individual_obj[indivial_i, :] = [ 9. 3. 60. 63.]
415     cord_individual_obj[indivial_i, :] = [10. 4. 51. 55.]

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416 cord_individual_obj[indivial_i,:] = [11. 3. 18. 21.]
417 cord_individual_obj[indivial_i,:] = [12. 3. 146. 149.]
418 cord_individual_obj[indivial_i,:] = [13. 3. 50. 53.]
419 cord_individual_obj[indivial_i,:] = [14. 4. 99. 103.]
420 cord_individual_obj[indivial_i,:] = [15. 3. 146. 149.]
421 cord_individual_obj[indivial_i,:] = [16. 4. 72. 76.]
422 cord_individual_obj[indivial_i,:] = [17. 2. 91. 93.]
423 cord_individual_obj[indivial_i,:] = [18. 2. 9. 11.]
424 cord_individual_obj[indivial_i,:] = [19. 4. 92. 96.]
425 cord_individual_obj[indivial_i,:] = [20. 3. 74. 77.]
426 cord_individual_obj[indivial_i,:] = [21. 3. 56. 59.]
427 cord_individual_obj[indivial_i,:] = [22. 3. 44. 47.]
428 cord_individual_obj[indivial_i,:] = [23. 3. 80. 83.]
429 cord_individual_obj[indivial_i,:] = [24. 3. 42. 45.]
430
431 min(cord_individual_obj[:,3]) = 5.0
432 histol_G_best_iter[iter,3] = 5.0
433 Begin iteration:
434
435 iter = 13
436 cord_individual_obj[indivial_i,:] = [0. 3. 36. 39.]
437 cord_individual_obj[indivial_i,:] = [1. 3. 48. 51.]
438 cord_individual_obj[indivial_i,:] = [2. 2. 60. 62.]
439 cord_individual_obj[indivial_i,:] = [3. 3. 10. 13.]
440 cord_individual_obj[indivial_i,:] = [4. 3. 86. 89.]
441 cord_individual_obj[indivial_i,:] = [5. 3. 6. 9.]
442 cord_individual_obj[indivial_i,:] = [6. 4. 2. 6.]
443 cord_individual_obj[indivial_i,:] = [7. 3. 20. 23.]
444 cord_individual_obj[indivial_i,:] = [8. 6. 33. 39.]
445 cord_individual_obj[indivial_i,:] = [9. 3. 2. 5.]
446 cord_individual_obj[indivial_i,:] = [10. 5. 19. 24.]
447 cord_individual_obj[indivial_i,:] = [11. 8. 10. 18.]
448 cord_individual_obj[indivial_i,:] = [12. 3. 2. 5.]
449 cord_individual_obj[indivial_i,:] = [13. 4. 42. 46.]
450 cord_individual_obj[indivial_i,:] = [14. 4. 105. 109.]
451 cord_individual_obj[indivial_i,:] = [15. 3. 10. 13.]
452 cord_individual_obj[indivial_i,:] = [16. 3. 36. 39.]
453 cord_individual_obj[indivial_i,:] = [17. 4. 2. 6.]
454 cord_individual_obj[indivial_i,:] = [18. 3. 36. 39.]
455 cord_individual_obj[indivial_i,:] = [19. 6. 2. 8.]
456 cord_individual_obj[indivial_i,:] = [20. 3. 34. 37.]
457 cord_individual_obj[indivial_i,:] = [21. 4. 35. 39.]
458 cord_individual_obj[indivial_i,:] = [22. 3. 18. 21.]
459 cord_individual_obj[indivial_i,:] = [23. 4. 50. 54.]
460 cord_individual_obj[indivial_i,:] = [24. 4. 74. 78.]
461
462 min(cord_individual_obj[:,3]) = 5.0
463 histol_G_best_iter[iter,3] = 5.0
464 Begin iteration:
465
466 iter = 14
467 cord_individual_obj[indivial_i,:] = [0. 3. 50. 53.]
468 cord_individual_obj[indivial_i,:] = [1. 2. 18. 20.]
469 cord_individual_obj[indivial_i,:] = [2. 4. 44. 48.]
470 cord_individual_obj[indivial_i,:] = [3. 4. 51. 55.]
471 cord_individual_obj[indivial_i,:] = [4. 3. 86. 89.]
472 cord_individual_obj[indivial_i,:] = [5. 4. 18. 22.]
473 cord_individual_obj[indivial_i,:] = [6. 3. 32. 35.]
474 cord_individual_obj[indivial_i,:] = [7. 4. 74. 78.]
475 cord_individual_obj[indivial_i,:] = [8. 3. 2. 5.]
476 cord_individual_obj[indivial_i,:] = [9. 3. 50. 53.]
477 cord_individual_obj[indivial_i,:] = [10. 3. 1. 4.]
478 cord_individual_obj[indivial_i,:] = [11. 2. 44. 46.]
479 cord_individual_obj[indivial_i,:] = [12. 3. 44. 47.]
480 cord_individual_obj[indivial_i,:] = [13. 3. 78. 81.]
481 cord_individual_obj[indivial_i,:] = [14. 3. 2. 5.]
482 cord_individual_obj[indivial_i,:] = [15. 3. 43. 46.]
483 cord_individual_obj[indivial_i,:] = [16. 4. 34. 38.]
484 cord_individual_obj[indivial_i,:] = [17. 5. 32. 37.]
485 cord_individual_obj[indivial_i,:] = [18. 4. 132. 136.]
486 cord_individual_obj[indivial_i,:] = [19. 5. 51. 56.]
487 cord_individual_obj[indivial_i,:] = [20. 3. 2. 5.]
488 cord_individual_obj[indivial_i,:] = [21. 4. 50. 54.]
489 cord_individual_obj[indivial_i,:] = [22. 4. 92. 96.]
490 cord_individual_obj[indivial_i,:] = [23. 6. 9. 15.]
491 cord_individual_obj[indivial_i,:] = [24. 3. 50. 53.]
492
493 min(cord_individual_obj[:,3]) = 4.0
494 histol_G_best_iter[iter,3] = 4.0
495 Begin iteration:
496
497 iter = 15
498 cord_individual_obj[indivial_i,:] = [0. 3. 6. 9.]
499 cord_individual_obj[indivial_i,:] = [1. 3. 76. 79.]

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500 cord_individual_obj[indivial_i, :] = [ 2. 2. 32. 34.]
501 cord_individual_obj[indivial_i, :] = [ 3. 3. 74. 77.]
502 cord_individual_obj[indivial_i, :] = [ 4. 3. 98. 101.]
503 cord_individual_obj[indivial_i, :] = [ 5. 3. 5. 8.]
504 cord_individual_obj[indivial_i, :] = [ 6. 5. 51. 56.]
505 cord_individual_obj[indivial_i, :] = [ 7. 3. 32. 35.]
506 cord_individual_obj[indivial_i, :] = [ 8. 3. 2. 5.]
507 cord_individual_obj[indivial_i, :] = [ 9. 4. 8. 12.]
508 cord_individual_obj[indivial_i, :] = [10. 6. 2. 8.]
509 cord_individual_obj[indivial_i, :] = [11. 3. 41. 44.]
510 cord_individual_obj[indivial_i, :] = [12. 3. 32. 35.]
511 cord_individual_obj[indivial_i, :] = [13. 5. 27. 32.]
512 cord_individual_obj[indivial_i, :] = [14. 4. 33. 37.]
513 cord_individual_obj[indivial_i, :] = [15. 3. 33. 36.]
514 cord_individual_obj[indivial_i, :] = [16. 3. 8. 11.]
515 cord_individual_obj[indivial_i, :] = [17. 2. 59. 61.]
516 cord_individual_obj[indivial_i, :] = [18. 3. 1. 4.]
517 cord_individual_obj[indivial_i, :] = [19. 5. 33. 38.]
518 cord_individual_obj[indivial_i, :] = [20. 4. 19. 23.]
519 cord_individual_obj[indivial_i, :] = [21. 3. 72. 75.]
520 cord_individual_obj[indivial_i, :] = [22. 3. 56. 59.]
521 cord_individual_obj[indivial_i, :] = [23. 6. 18. 24.]
522 cord_individual_obj[indivial_i, :] = [24. 5. 120. 125.]
523
524 min(cord_individual_obj[:, 3]) = 4.0
525 histol_G_best_iter[iter, 3] = 4.0
526 Begin iteration:
527
528 iter = 16
529 cord_individual_obj[indivial_i, :] = [ 0. 3. 6. 9.]
530 cord_individual_obj[indivial_i, :] = [ 1. 3. 18. 21.]
531 cord_individual_obj[indivial_i, :] = [ 2. 3. 32. 35.]
532 cord_individual_obj[indivial_i, :] = [ 3. 3. 60. 63.]
533 cord_individual_obj[indivial_i, :] = [ 4. 3. 68. 71.]
534 cord_individual_obj[indivial_i, :] = [ 5. 3. 46. 49.]
535 cord_individual_obj[indivial_i, :] = [ 6. 5. 51. 56.]
536 cord_individual_obj[indivial_i, :] = [ 7. 3. 32. 35.]
537 cord_individual_obj[indivial_i, :] = [ 8. 3. 2. 5.]
538 cord_individual_obj[indivial_i, :] = [ 9. 4. 24. 28.]
539 cord_individual_obj[indivial_i, :] = [10. 6. 2. 8.]
540 cord_individual_obj[indivial_i, :] = [11. 3. 18. 21.]
541 cord_individual_obj[indivial_i, :] = [12. 3. 32. 35.]
542 cord_individual_obj[indivial_i, :] = [13. 4. 26. 30.]
543 cord_individual_obj[indivial_i, :] = [14. 4. 51. 55.]
544 cord_individual_obj[indivial_i, :] = [15. 4. 50. 54.]
545 cord_individual_obj[indivial_i, :] = [16. 3. 8. 11.]
546 cord_individual_obj[indivial_i, :] = [17. 6. 8. 14.]
547 cord_individual_obj[indivial_i, :] = [18. 3. 9. 12.]
548 cord_individual_obj[indivial_i, :] = [19. 4. 33. 37.]
549 cord_individual_obj[indivial_i, :] = [20. 4. 18. 22.]
550 cord_individual_obj[indivial_i, :] = [21. 4. 58. 62.]
551 cord_individual_obj[indivial_i, :] = [22. 3. 44. 47.]
552 cord_individual_obj[indivial_i, :] = [23. 6. 8. 14.]
553 cord_individual_obj[indivial_i, :] = [24. 3. 1. 4.]
554
555 min(cord_individual_obj[:, 3]) = 4.0
556 histol_G_best_iter[iter, 3] = 4.0
557 Begin iteration:
558
559 iter = 17
560 cord_individual_obj[indivial_i, :] = [ 0. 3. 32. 35.]
561 cord_individual_obj[indivial_i, :] = [ 1. 3. 18. 21.]
562 cord_individual_obj[indivial_i, :] = [ 2. 2. 32. 34.]
563 cord_individual_obj[indivial_i, :] = [ 3. 3. 44. 47.]
564 cord_individual_obj[indivial_i, :] = [ 4. 3. 1. 4.]
565 cord_individual_obj[indivial_i, :] = [ 5. 4. 27. 31.]
566 cord_individual_obj[indivial_i, :] = [ 6. 3. 49. 52.]
567 cord_individual_obj[indivial_i, :] = [ 7. 3. 44. 47.]
568 cord_individual_obj[indivial_i, :] = [ 8. 3. 2. 5.]
569 cord_individual_obj[indivial_i, :] = [ 9. 3. 24. 27.]
570 cord_individual_obj[indivial_i, :] = [10. 6. 2. 8.]
571 cord_individual_obj[indivial_i, :] = [11. 3. 41. 44.]
572 cord_individual_obj[indivial_i, :] = [12. 4. 19. 23.]
573 cord_individual_obj[indivial_i, :] = [13. 4. 42. 46.]
574 cord_individual_obj[indivial_i, :] = [14. 4. 33. 37.]
575 cord_individual_obj[indivial_i, :] = [15. 4. 19. 23.]
576 cord_individual_obj[indivial_i, :] = [16. 3. 8. 11.]
577 cord_individual_obj[indivial_i, :] = [17. 6. 2. 8.]
578 cord_individual_obj[indivial_i, :] = [18. 4. 10. 14.]
579 cord_individual_obj[indivial_i, :] = [19. 3. 8. 11.]
580 cord_individual_obj[indivial_i, :] = [20. 4. 19. 23.]
581 cord_individual_obj[indivial_i, :] = [21. 3. 40. 43.]
582 cord_individual_obj[indivial_i, :] = [22. 3. 40. 43.]
583 cord_individual_obj[indivial_i, :] = [23. 4. 31. 35.]

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584     cord_individual_obj[indivial_i, :] = [ 24.  5. 130. 135.]
585
586     min(cord_individual_obj[:, 3]) = 4.0
587     historl_G_best_iter[iter, 3] = 4.0
588 Begin iteration:
589
590 iter = 18
591     cord_individual_obj[indivial_i, :] = [0. 3. 6. 9.]
592     cord_individual_obj[indivial_i, :] = [ 1. 4. 20. 24.]
593     cord_individual_obj[indivial_i, :] = [ 2. 4. 32. 36.]
594     cord_individual_obj[indivial_i, :] = [ 3. 3. 32. 35.]
595     cord_individual_obj[indivial_i, :] = [ 4. 3. 86. 89.]
596     cord_individual_obj[indivial_i, :] = [ 5. 4. 73. 77.]
597     cord_individual_obj[indivial_i, :] = [ 6. 5. 51. 56.]
598     cord_individual_obj[indivial_i, :] = [ 7. 3. 32. 35.]
599     cord_individual_obj[indivial_i, :] = [ 8. 4. 33. 37.]
600     cord_individual_obj[indivial_i, :] = [ 9. 5. 8. 13.]
601     cord_individual_obj[indivial_i, :] = [10. 3. 2. 5.]
602     cord_individual_obj[indivial_i, :] = [11. 4. 19. 23.]
603     cord_individual_obj[indivial_i, :] = [12. 4. 18. 22.]
604     cord_individual_obj[indivial_i, :] = [13. 5. 27. 32.]
605     cord_individual_obj[indivial_i, :] = [14. 4. 33. 37.]
606     cord_individual_obj[indivial_i, :] = [15. 4. 50. 54.]
607     cord_individual_obj[indivial_i, :] = [16. 4. 2. 6.]
608     cord_individual_obj[indivial_i, :] = [17. 4. 2. 6.]
609     cord_individual_obj[indivial_i, :] = [18. 3. 19. 22.]
610     cord_individual_obj[indivial_i, :] = [19. 5. 18. 23.]
611     cord_individual_obj[indivial_i, :] = [20. 4. 8. 12.]
612     cord_individual_obj[indivial_i, :] = [21. 3. 1. 4.]
613     cord_individual_obj[indivial_i, :] = [22. 3. 32. 35.]
614     cord_individual_obj[indivial_i, :] = [23. 7. 3. 10.]
615     cord_individual_obj[indivial_i, :] = [24. 3. 1. 4.]
616
617     min(cord_individual_obj[:, 3]) = 4.0
618     historl_G_best_iter[iter, 3] = 4.0
619 Begin iteration:
620
621 iter = 19
622     cord_individual_obj[indivial_i, :] = [ 0. 4. 6. 10.]
623     cord_individual_obj[indivial_i, :] = [ 1. 3. 11. 14.]
624     cord_individual_obj[indivial_i, :] = [ 2. 6. 10. 16.]
625     cord_individual_obj[indivial_i, :] = [ 3. 3. 32. 35.]
626     cord_individual_obj[indivial_i, :] = [ 4. 3. 1. 4.]
627     cord_individual_obj[indivial_i, :] = [ 5. 4. 46. 50.]
628     cord_individual_obj[indivial_i, :] = [ 6. 4. 32. 36.]
629     cord_individual_obj[indivial_i, :] = [ 7. 4. 20. 24.]
630     cord_individual_obj[indivial_i, :] = [ 8. 4. 51. 55.]
631     cord_individual_obj[indivial_i, :] = [ 9. 4. 2. 6.]
632     cord_individual_obj[indivial_i, :] = [10. 4. 2. 6.]
633     cord_individual_obj[indivial_i, :] = [11. 6. 8. 14.]
634     cord_individual_obj[indivial_i, :] = [12. 3. 18. 21.]
635     cord_individual_obj[indivial_i, :] = [13. 8. 66. 74.]
636     cord_individual_obj[indivial_i, :] = [14. 6. 3. 9.]
637     cord_individual_obj[indivial_i, :] = [15. 5. 51. 56.]
638     cord_individual_obj[indivial_i, :] = [16. 4. 34. 38.]
639     cord_individual_obj[indivial_i, :] = [17. 6. 18. 24.]
640     cord_individual_obj[indivial_i, :] = [18. 3. 3. 6.]
641     cord_individual_obj[indivial_i, :] = [19. 9. 3. 12.]
642     cord_individual_obj[indivial_i, :] = [20. 4. 21. 25.]
643     cord_individual_obj[indivial_i, :] = [21. 6. 32. 38.]
644     cord_individual_obj[indivial_i, :] = [22. 4. 33. 37.]
645     cord_individual_obj[indivial_i, :] = [23. 6. 31. 37.]
646     cord_individual_obj[indivial_i, :] = [24. 5. 8. 13.]
647
648     min(cord_individual_obj[:, 3]) = 4.0
649     historl_G_best_iter[iter, 3] = 4.0
650 Begin iteration:
651
652 iter = 20
653     cord_individual_obj[indivial_i, :] = [ 0. 6. 24. 30.]
654     cord_individual_obj[indivial_i, :] = [ 1. 4. 21. 25.]
655     cord_individual_obj[indivial_i, :] = [ 2. 6. 50. 56.]
656     cord_individual_obj[indivial_i, :] = [ 3. 4. 58. 62.]
657     cord_individual_obj[indivial_i, :] = [ 4. 3. 50. 53.]
658     cord_individual_obj[indivial_i, :] = [ 5. 3. 34. 37.]
659     cord_individual_obj[indivial_i, :] = [ 6. 5. 10. 15.]
660     cord_individual_obj[indivial_i, :] = [ 7. 4. 34. 38.]
661     cord_individual_obj[indivial_i, :] = [ 8. 2. 1. 3.]
662     cord_individual_obj[indivial_i, :] = [ 9. 3. 8. 11.]
663     cord_individual_obj[indivial_i, :] = [10. 6. 3. 9.]
664     cord_individual_obj[indivial_i, :] = [11. 4. 61. 65.]
665     cord_individual_obj[indivial_i, :] = [12. 4. 32. 36.]
666     cord_individual_obj[indivial_i, :] = [13. 3. 1. 4.]
667     cord_individual_obj[indivial_i, :] = [14. 4. 138. 142.]

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668 cord_individual_obj[indivial_i, :] = [15. 4. 34. 38.]
669 cord_individual_obj[indivial_i, :] = [16. 3. 18. 21.]
670 cord_individual_obj[indivial_i, :] = [17. 6. 18. 24.]
671 cord_individual_obj[indivial_i, :] = [18. 4. 48. 52.]
672 cord_individual_obj[indivial_i, :] = [19. 6. 36. 42.]
673 cord_individual_obj[indivial_i, :] = [20. 3. 32. 35.]
674 cord_individual_obj[indivial_i, :] = [21. 6. 58. 64.]
675 cord_individual_obj[indivial_i, :] = [22. 4. 32. 36.]
676 cord_individual_obj[indivial_i, :] = [23. 6. 31. 37.]
677 cord_individual_obj[indivial_i, :] = [24. 5. 8. 13.]
678
679 min(cord_individual_obj[:, 3]) = 3.0
680 historl_G_best_iter[iter, 3] = 3.0
681 Iteration calculate over
682
683
684
685
686 All item are in Bin and:
687 Bin area = 1080
688 Real_area = 100.0
689 Proportion_of_area = 0.09259259259259259
690 BEST_CHROM =
691     berth: [ 4. 12. 11. 25.5 17.5]
692     time: [0. 1. 0. 0. 0.]
693     num_QC: [5. 6. 6. 2. 4.]
694 Objective function values and some other indicators:
695 Obj0 = 2.00          Obj1 = 1.00          Obj0 + Obj1 = 3.00
696 Total movement of crane: 0.00
697 Total waiting time in berth position: 1.00
698 Total index of q during berthing: 359.00
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: 2.0
    .0           gama_i1 + 1: 3.0      gama_i1 - gama_i0: 2.0      duration_time_i: 3.0      demand_i: 280.0      work load_i:
280.0      work load gap_i: 0
701
    V_id: 1      li: 8.0      xi: 12.0      bow of i: 8.0      tail of i: 16.0      gama_i0: 1.0      gama_i1: 2
    .0           gama_i1 + 1: 3.0      gama_i1 - gama_i0: 1.0      duration_time_i: 2.0      demand_i: 200.0      work
load_i: 200.0      work load gap_i: 0
702
    V_id: 2      li: 6.0      xi: 11.0      bow of i: 8.0      tail of i: 14.0      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: 120.0      work
load_i: 120.0      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
    V_id: 4      li: 7.0      xi: 17.5      bow of i: 14.0      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: 80.0      work
load_i: 80.0      work load gap_i: 0
705
706 Algorithm finished and the total CPU time: 139 s
707 End
708

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