

unknown

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80 cord_individual_obj[indivial_i, :] = [16. 5. 7. 12.]
81 cord_individual_obj[indivial_i, :] = [17. 4. 27. 31.]
82 cord_individual_obj[indivial_i, :] = [18. 3. 100. 103.]
83 cord_individual_obj[indivial_i, :] = [19. 4. 78. 82.]
84 cord_individual_obj[indivial_i, :] = [20. 3. 88. 91.]
85 cord_individual_obj[indivial_i, :] = [21. 4. 98. 102.]
86 cord_individual_obj[indivial_i, :] = [22. 4. 22. 26.]
87 cord_individual_obj[indivial_i, :] = [23. 6. 36. 42.]
88 cord_individual_obj[indivial_i, :] = [24. 3. 93. 96.]
89
90 min(cord_individual_obj[:, 3]) = 9.0
91 historl_G_best_iter[iter, 3] = 9.0
92 Begin iteration:
93
94 iter = 2
95 cord_individual_obj[indivial_i, :] = [ 0. 3. 104. 107.]
96 cord_individual_obj[indivial_i, :] = [ 1. 5. 52. 57.]
97 cord_individual_obj[indivial_i, :] = [ 2. 3. 58. 61.]
98 cord_individual_obj[indivial_i, :] = [3. 5. 4. 9.]
99 cord_individual_obj[indivial_i, :] = [ 4. 3. 19. 22.]
100 cord_individual_obj[indivial_i, :] = [ 5. 3. 152. 155.]
101 cord_individual_obj[indivial_i, :] = [ 6. 5. 59. 64.]
102 cord_individual_obj[indivial_i, :] = [ 7. 4. 68. 72.]
103 cord_individual_obj[indivial_i, :] = [ 8. 5. 58. 63.]
104 cord_individual_obj[indivial_i, :] = [ 9. 4. 47. 51.]
105 cord_individual_obj[indivial_i, :] = [10. 5. 32. 37.]
106 cord_individual_obj[indivial_i, :] = [11. 4. 60. 64.]
107 cord_individual_obj[indivial_i, :] = [12. 3. 128. 131.]
108 cord_individual_obj[indivial_i, :] = [13. 4. 84. 88.]
109 cord_individual_obj[indivial_i, :] = [14. 3. 114. 117.]
110 cord_individual_obj[indivial_i, :] = [15. 5. 22. 27.]
111 cord_individual_obj[indivial_i, :] = [16. 4. 42. 46.]
112 cord_individual_obj[indivial_i, :] = [17. 5. 20. 25.]
113 cord_individual_obj[indivial_i, :] = [18. 6. 11. 17.]
114 cord_individual_obj[indivial_i, :] = [19. 6. 55. 61.]
115 cord_individual_obj[indivial_i, :] = [20. 3. 100. 103.]
116 cord_individual_obj[indivial_i, :] = [21. 4. 71. 75.]
117 cord_individual_obj[indivial_i, :] = [22. 3. 58. 61.]
118 cord_individual_obj[indivial_i, :] = [23. 5. 88. 93.]
119 cord_individual_obj[indivial_i, :] = [24. 5. 14. 19.]
120
121 min(cord_individual_obj[:, 3]) = 9.0
122 historl_G_best_iter[iter, 3] = 9.0
123 Begin iteration:
124
125 iter = 3
126 cord_individual_obj[indivial_i, :] = [ 0. 6. 87. 93.]
127 cord_individual_obj[indivial_i, :] = [ 1. 5. 64. 69.]
128 cord_individual_obj[indivial_i, :] = [ 2. 5. 30. 35.]
129 cord_individual_obj[indivial_i, :] = [ 3. 3. 100. 103.]
130 cord_individual_obj[indivial_i, :] = [ 4. 5. 62. 67.]
131 cord_individual_obj[indivial_i, :] = [5. 5. 4. 9.]
132 cord_individual_obj[indivial_i, :] = [ 6. 5. 82. 87.]
133 cord_individual_obj[indivial_i, :] = [ 7. 3. 6. 9.]
134 cord_individual_obj[indivial_i, :] = [ 8. 7. 60. 67.]
135 cord_individual_obj[indivial_i, :] = [ 9. 4. 84. 88.]
136 cord_individual_obj[indivial_i, :] = [10. 4. 3. 7.]
137 cord_individual_obj[indivial_i, :] = [11. 7. 56. 63.]
138 cord_individual_obj[indivial_i, :] = [12. 6. 100. 106.]
139 cord_individual_obj[indivial_i, :] = [13. 5. 51. 56.]
140 cord_individual_obj[indivial_i, :] = [14. 5. 70. 75.]
141 cord_individual_obj[indivial_i, :] = [15. 7. 6. 13.]
142 cord_individual_obj[indivial_i, :] = [16. 4. 41. 45.]
143 cord_individual_obj[indivial_i, :] = [17. 3. 120. 123.]
144 cord_individual_obj[indivial_i, :] = [18. 5. 78. 83.]
145 cord_individual_obj[indivial_i, :] = [19. 3. 108. 111.]
146 cord_individual_obj[indivial_i, :] = [20. 5. 60. 65.]
147 cord_individual_obj[indivial_i, :] = [21. 5. 33. 38.]
148 cord_individual_obj[indivial_i, :] = [22. 5. 40. 45.]
149 cord_individual_obj[indivial_i, :] = [23. 4. 5. 9.]
150 cord_individual_obj[indivial_i, :] = [24. 3. 138. 141.]
151
152 min(cord_individual_obj[:, 3]) = 7.0
153 historl_G_best_iter[iter, 3] = 7.0
154 Begin iteration:
155
156 iter = 4
157 cord_individual_obj[indivial_i, :] = [ 0. 6. 32. 38.]
158 cord_individual_obj[indivial_i, :] = [ 1. 3. 28. 31.]
159 cord_individual_obj[indivial_i, :] = [ 2. 3. 92. 95.]
160 cord_individual_obj[indivial_i, :] = [ 3. 5. 52. 57.]
161 cord_individual_obj[indivial_i, :] = [ 4. 4. 108. 112.]
162 cord_individual_obj[indivial_i, :] = [ 5. 5. 47. 52.]
163 cord_individual_obj[indivial_i, :] = [ 6. 4. 68. 72.]

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164 cord_individual_obj[indivial_i,:] = [ 7. 3. 94. 97.]
165 cord_individual_obj[indivial_i,:] = [ 8. 4. 10. 14.]
166 cord_individual_obj[indivial_i,:] = [ 9. 6. 20. 26.]
167 cord_individual_obj[indivial_i,:] = [10. 5. 82. 87.]
168 cord_individual_obj[indivial_i,:] = [11. 5. 4. 9.]
169 cord_individual_obj[indivial_i,:] = [12. 4. 134. 138.]
170 cord_individual_obj[indivial_i,:] = [13. 5. 34. 39.]
171 cord_individual_obj[indivial_i,:] = [14. 3. 122. 125.]
172 cord_individual_obj[indivial_i,:] = [15. 5. 44. 49.]
173 cord_individual_obj[indivial_i,:] = [16. 3. 67. 70.]
174 cord_individual_obj[indivial_i,:] = [17. 4. 48. 52.]
175 cord_individual_obj[indivial_i,:] = [18. 3. 35. 38.]
176 cord_individual_obj[indivial_i,:] = [19. 4. 66. 70.]
177 cord_individual_obj[indivial_i,:] = [20. 3. 76. 79.]
178 cord_individual_obj[indivial_i,:] = [21. 5. 45. 50.]
179 cord_individual_obj[indivial_i,:] = [22. 5. 56. 61.]
180 cord_individual_obj[indivial_i,:] = [23. 5. 10. 15.]
181 cord_individual_obj[indivial_i,:] = [24. 4. 3. 7.]
182
183 min(cord_individual_obj[:,3]) = 7.0
184 historl_G_best_iter[iter,3] = 7.0
185 Begin iteration:
186
187 iter = 5
188 cord_individual_obj[indivial_i,:] = [ 0. 4. 48. 52.]
189 cord_individual_obj[indivial_i,:] = [ 1. 4. 62. 66.]
190 cord_individual_obj[indivial_i,:] = [ 2. 4. 24. 28.]
191 cord_individual_obj[indivial_i,:] = [ 3. 5. 76. 81.]
192 cord_individual_obj[indivial_i,:] = [ 4. 5. 36. 41.]
193 cord_individual_obj[indivial_i,:] = [ 5. 5. 82. 87.]
194 cord_individual_obj[indivial_i,:] = [ 6. 5. 46. 51.]
195 cord_individual_obj[indivial_i,:] = [ 7. 7. 20. 27.]
196 cord_individual_obj[indivial_i,:] = [ 8. 6. 37. 43.]
197 cord_individual_obj[indivial_i,:] = [ 9. 7. 6. 13.]
198 cord_individual_obj[indivial_i,:] = [10. 4. 171. 175.]
199 cord_individual_obj[indivial_i,:] = [11. 7. 60. 67.]
200 cord_individual_obj[indivial_i,:] = [12. 4. 3. 7.]
201 cord_individual_obj[indivial_i,:] = [13. 5. 58. 63.]
202 cord_individual_obj[indivial_i,:] = [14. 3. 135. 138.]
203 cord_individual_obj[indivial_i,:] = [15. 6. 77. 83.]
204 cord_individual_obj[indivial_i,:] = [16. 3. 31. 34.]
205 cord_individual_obj[indivial_i,:] = [17. 5. 16. 21.]
206 cord_individual_obj[indivial_i,:] = [18. 4. 100. 104.]
207 cord_individual_obj[indivial_i,:] = [19. 5. 20. 25.]
208 cord_individual_obj[indivial_i,:] = [20. 4. 114. 118.]
209 cord_individual_obj[indivial_i,:] = [21. 4. 25. 29.]
210 cord_individual_obj[indivial_i,:] = [22. 4. 140. 144.]
211 cord_individual_obj[indivial_i,:] = [23. 4. 4. 8.]
212 cord_individual_obj[indivial_i,:] = [24. 5. 36. 41.]
213
214 min(cord_individual_obj[:,3]) = 7.0
215 historl_G_best_iter[iter,3] = 7.0
216 Begin iteration:
217
218 iter = 6
219 cord_individual_obj[indivial_i,:] = [ 0. 5. 59. 64.]
220 cord_individual_obj[indivial_i,:] = [ 1. 5. 32. 37.]
221 cord_individual_obj[indivial_i,:] = [ 2. 3. 50. 53.]
222 cord_individual_obj[indivial_i,:] = [ 3. 5. 23. 28.]
223 cord_individual_obj[indivial_i,:] = [ 4. 3. 108. 111.]
224 cord_individual_obj[indivial_i,:] = [ 5. 5. 94. 99.]
225 cord_individual_obj[indivial_i,:] = [ 6. 4. 27. 31.]
226 cord_individual_obj[indivial_i,:] = [ 7. 3. 110. 113.]
227 cord_individual_obj[indivial_i,:] = [ 8. 4. 84. 88.]
228 cord_individual_obj[indivial_i,:] = [ 9. 4. 97. 101.]
229 cord_individual_obj[indivial_i,:] = [10. 4. 3. 7.]
230 cord_individual_obj[indivial_i,:] = [11. 4. 4. 8.]
231 cord_individual_obj[indivial_i,:] = [12. 3. 108. 111.]
232 cord_individual_obj[indivial_i,:] = [13. 5. 70. 75.]
233 cord_individual_obj[indivial_i,:] = [14. 6. 91. 97.]
234 cord_individual_obj[indivial_i,:] = [15. 4. 20. 24.]
235 cord_individual_obj[indivial_i,:] = [16. 7. 60. 67.]
236 cord_individual_obj[indivial_i,:] = [17. 4. 32. 36.]
237 cord_individual_obj[indivial_i,:] = [18. 6. 54. 60.]
238 cord_individual_obj[indivial_i,:] = [19. 3. 96. 99.]
239 cord_individual_obj[indivial_i,:] = [20. 3. 30. 33.]
240 cord_individual_obj[indivial_i,:] = [21. 5. 12. 17.]
241 cord_individual_obj[indivial_i,:] = [22. 4. 58. 62.]
242 cord_individual_obj[indivial_i,:] = [23. 5. 38. 43.]
243 cord_individual_obj[indivial_i,:] = [24. 5. 33. 38.]
244
245 min(cord_individual_obj[:,3]) = 7.0
246 historl_G_best_iter[iter,3] = 7.0
247 Begin iteration:

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248
249 iter = 7
250 cord_individual_obj[indivial_i, :] = [ 0.  3. 39. 42.]
251 cord_individual_obj[indivial_i, :] = [ 1.  5. 24. 29.]
252 cord_individual_obj[indivial_i, :] = [ 2.  3. 30. 33.]
253 cord_individual_obj[indivial_i, :] = [ 3.  5. 52. 57.]
254 cord_individual_obj[indivial_i, :] = [ 4.  4. 80. 84.]
255 cord_individual_obj[indivial_i, :] = [ 5.  6. 33. 39.]
256 cord_individual_obj[indivial_i, :] = [ 6.  4. 27. 31.]
257 cord_individual_obj[indivial_i, :] = [ 7.  4. 3. 7.]
258 cord_individual_obj[indivial_i, :] = [ 8.  6. 8. 14.]
259 cord_individual_obj[indivial_i, :] = [ 9.  5. 22. 27.]
260 cord_individual_obj[indivial_i, :] = [10.  5. 38. 43.]
261 cord_individual_obj[indivial_i, :] = [11.  6. 7. 13.]
262 cord_individual_obj[indivial_i, :] = [12.  5. 44. 49.]
263 cord_individual_obj[indivial_i, :] = [13.  6. 33. 39.]
264 cord_individual_obj[indivial_i, :] = [14.  3. 70. 73.]
265 cord_individual_obj[indivial_i, :] = [15.  5. 12. 17.]
266 cord_individual_obj[indivial_i, :] = [16.  5. 64. 69.]
267 cord_individual_obj[indivial_i, :] = [17.  3. 44. 47.]
268 cord_individual_obj[indivial_i, :] = [18.  3. 52. 55.]
269 cord_individual_obj[indivial_i, :] = [19.  5. 84. 89.]
270 cord_individual_obj[indivial_i, :] = [20.  4. 27. 31.]
271 cord_individual_obj[indivial_i, :] = [21.  5. 3. 8.]
272 cord_individual_obj[indivial_i, :] = [22.  4. 112. 116.]
273 cord_individual_obj[indivial_i, :] = [23.  5. 4. 9.]
274 cord_individual_obj[indivial_i, :] = [24.  6. 5. 11.]
275

276 min(cord_individual_obj[:, 3]) = 7.0
277 historl_G_best_iter[iter, 3] = 7.0
278 Begin iteration:
279
280 iter = 8
281 cord_individual_obj[indivial_i, :] = [ 0.  3. 87. 90.]
282 cord_individual_obj[indivial_i, :] = [ 1.  5. 82. 87.]
283 cord_individual_obj[indivial_i, :] = [ 2.  3. 40. 43.]
284 cord_individual_obj[indivial_i, :] = [ 3.  5. 23. 28.]
285 cord_individual_obj[indivial_i, :] = [ 4.  3. 108. 111.]
286 cord_individual_obj[indivial_i, :] = [ 5.  4. 82. 86.]
287 cord_individual_obj[indivial_i, :] = [ 6.  5. 222. 227.]
288 cord_individual_obj[indivial_i, :] = [ 7.  5. 37. 42.]
289 cord_individual_obj[indivial_i, :] = [ 8.  3. 114. 117.]
290 cord_individual_obj[indivial_i, :] = [ 9.  6. 24. 30.]
291 cord_individual_obj[indivial_i, :] = [10.  4. 145. 149.]
292 cord_individual_obj[indivial_i, :] = [11.  6. 4. 10.]
293 cord_individual_obj[indivial_i, :] = [12.  4. 110. 114.]
294 cord_individual_obj[indivial_i, :] = [13.  5. 16. 21.]
295 cord_individual_obj[indivial_i, :] = [14.  5. 140. 145.]
296 cord_individual_obj[indivial_i, :] = [15.  5. 40. 45.]
297 cord_individual_obj[indivial_i, :] = [16.  5. 82. 87.]
298 cord_individual_obj[indivial_i, :] = [17.  5. 28. 33.]
299 cord_individual_obj[indivial_i, :] = [18.  4. 53. 57.]
300 cord_individual_obj[indivial_i, :] = [19.  6. 73. 79.]
301 cord_individual_obj[indivial_i, :] = [20.  5. 39. 44.]
302 cord_individual_obj[indivial_i, :] = [21.  5. 69. 74.]
303 cord_individual_obj[indivial_i, :] = [22.  4. 3. 7.]
304 cord_individual_obj[indivial_i, :] = [23.  5. 54. 59.]
305 cord_individual_obj[indivial_i, :] = [24.  5. 38. 43.]
306

307 min(cord_individual_obj[:, 3]) = 7.0
308 historl_G_best_iter[iter, 3] = 7.0
309 Begin iteration:
310
311 iter = 9
312 cord_individual_obj[indivial_i, :] = [ 0.  4. 40. 44.]
313 cord_individual_obj[indivial_i, :] = [ 1.  5. 56. 61.]
314 cord_individual_obj[indivial_i, :] = [ 2.  5. 58. 63.]
315 cord_individual_obj[indivial_i, :] = [ 3.  5. 9. 14.]
316 cord_individual_obj[indivial_i, :] = [ 4.  5. 56. 61.]
317 cord_individual_obj[indivial_i, :] = [ 5.  3. 78. 81.]
318 cord_individual_obj[indivial_i, :] = [ 6.  4. 3. 7.]
319 cord_individual_obj[indivial_i, :] = [ 7.  4. 122. 126.]
320 cord_individual_obj[indivial_i, :] = [ 8.  4. 51. 55.]
321 cord_individual_obj[indivial_i, :] = [ 9.  7. 6. 13.]
322 cord_individual_obj[indivial_i, :] = [10.  7. 38. 45.]
323 cord_individual_obj[indivial_i, :] = [11.  6. 104. 110.]
324 cord_individual_obj[indivial_i, :] = [12.  4. 63. 67.]
325 cord_individual_obj[indivial_i, :] = [13.  6. 9. 15.]
326 cord_individual_obj[indivial_i, :] = [14.  5. 142. 147.]
327 cord_individual_obj[indivial_i, :] = [15.  4. 26. 30.]
328 cord_individual_obj[indivial_i, :] = [16.  7. 18. 25.]
329 cord_individual_obj[indivial_i, :] = [17.  5. 36. 41.]
330 cord_individual_obj[indivial_i, :] = [18.  3. 154. 157.]
331 cord_individual_obj[indivial_i, :] = [19.  5. 10. 15.]

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332 cord_individual_obj[indivial_i,:] = [20. 5. 4. 9.]
333 cord_individual_obj[indivial_i,:] = [21. 3. 4. 7.]
334 cord_individual_obj[indivial_i,:] = [22. 3. 41.44.]
335 cord_individual_obj[indivial_i,:] = [23. 5. 10.15.]
336 cord_individual_obj[indivial_i,:] = [24. 6. 5.11.]
337
338 min(cord_individual_obj[:,3]) = 7.0
339 histol_G_best_iter[iter,3] = 7.0
340 Begin iteration:
341
342 iter = 10
343 cord_individual_obj[indivial_i,:] = [ 0. 5. 59. 64.]
344 cord_individual_obj[indivial_i,:] = [ 1. 7. 52. 59.]
345 cord_individual_obj[indivial_i,:] = [ 2. 5. 68. 73.]
346 cord_individual_obj[indivial_i,:] = [ 3. 4. 64. 68.]
347 cord_individual_obj[indivial_i,:] = [ 4. 4. 116. 120.]
348 cord_individual_obj[indivial_i,:] = [ 5. 6. 27. 33.]
349 cord_individual_obj[indivial_i,:] = [ 6. 4. 43. 47.]
350 cord_individual_obj[indivial_i,:] = [ 7. 5. 37. 42.]
351 cord_individual_obj[indivial_i,:] = [ 8. 5. 55. 60.]
352 cord_individual_obj[indivial_i,:] = [ 9. 3. 40. 43.]
353 cord_individual_obj[indivial_i,:] = [10. 7. 24. 31.]
354 cord_individual_obj[indivial_i,:] = [11. 7. 78. 85.]
355 cord_individual_obj[indivial_i,:] = [12. 4. 86. 90.]
356 cord_individual_obj[indivial_i,:] = [13. 5. 134. 139.]
357 cord_individual_obj[indivial_i,:] = [14. 3. 88. 91.]
358 cord_individual_obj[indivial_i,:] = [15. 5. 48. 53.]
359 cord_individual_obj[indivial_i,:] = [16. 6. 8. 14.]
360 cord_individual_obj[indivial_i,:] = [17. 5. 50. 55.]
361 cord_individual_obj[indivial_i,:] = [18. 4. 3. 7.]
362 cord_individual_obj[indivial_i,:] = [19. 4. 20. 24.]
363 cord_individual_obj[indivial_i,:] = [20. 5. 64. 69.]
364 cord_individual_obj[indivial_i,:] = [21. 5. 4. 9.]
365 cord_individual_obj[indivial_i,:] = [22. 4. 130. 134.]
366 cord_individual_obj[indivial_i,:] = [23. 4. 72. 76.]
367 cord_individual_obj[indivial_i,:] = [24. 5. 56. 61.]
368
369 min(cord_individual_obj[:,3]) = 7.0
370 histol_G_best_iter[iter,3] = 7.0
371 Begin iteration:
372
373 iter = 11
374 cord_individual_obj[indivial_i,:] = [ 0. 5. 59. 64.]
375 cord_individual_obj[indivial_i,:] = [ 1. 3. 102. 105.]
376 cord_individual_obj[indivial_i,:] = [ 2. 5. 64. 69.]
377 cord_individual_obj[indivial_i,:] = [ 3. 5. 42. 47.]
378 cord_individual_obj[indivial_i,:] = [ 4. 4. 116. 120.]
379 cord_individual_obj[indivial_i,:] = [ 5. 5. 27. 32.]
380 cord_individual_obj[indivial_i,:] = [ 6. 5. 40. 45.]
381 cord_individual_obj[indivial_i,:] = [ 7. 4. 5. 9.]
382 cord_individual_obj[indivial_i,:] = [ 8. 4. 134. 138.]
383 cord_individual_obj[indivial_i,:] = [ 9. 6. 26. 32.]
384 cord_individual_obj[indivial_i,:] = [10. 5. 32. 37.]
385 cord_individual_obj[indivial_i,:] = [11. 6. 104. 110.]
386 cord_individual_obj[indivial_i,:] = [12. 5. 182. 187.]
387 cord_individual_obj[indivial_i,:] = [13. 4. 3. 7.]
388 cord_individual_obj[indivial_i,:] = [14. 4. 34. 38.]
389 cord_individual_obj[indivial_i,:] = [15. 5. 48. 53.]
390 cord_individual_obj[indivial_i,:] = [16. 5. 78. 83.]
391 cord_individual_obj[indivial_i,:] = [17. 4. 66. 70.]
392 cord_individual_obj[indivial_i,:] = [18. 6. 166. 172.]
393 cord_individual_obj[indivial_i,:] = [19. 4. 42. 46.]
394 cord_individual_obj[indivial_i,:] = [20. 6. 4. 10.]
395 cord_individual_obj[indivial_i,:] = [21. 3. 4. 7.]
396 cord_individual_obj[indivial_i,:] = [22. 4. 130. 134.]
397 cord_individual_obj[indivial_i,:] = [23. 5. 54. 59.]
398 cord_individual_obj[indivial_i,:] = [24. 5. 36. 41.]
399
400 min(cord_individual_obj[:,3]) = 7.0
401 histol_G_best_iter[iter,3] = 7.0
402 Begin iteration:
403
404 iter = 12
405 cord_individual_obj[indivial_i,:] = [ 0. 5. 30. 35.]
406 cord_individual_obj[indivial_i,:] = [ 1. 3. 115. 118.]
407 cord_individual_obj[indivial_i,:] = [ 2. 5. 24. 29.]
408 cord_individual_obj[indivial_i,:] = [ 3. 4. 80. 84.]
409 cord_individual_obj[indivial_i,:] = [ 4. 3. 10. 13.]
410 cord_individual_obj[indivial_i,:] = [ 5. 4. 24. 28.]
411 cord_individual_obj[indivial_i,:] = [ 6. 4. 32. 36.]
412 cord_individual_obj[indivial_i,:] = [ 7. 3. 36. 39.]
413 cord_individual_obj[indivial_i,:] = [ 8. 4. 20. 24.]
414 cord_individual_obj[indivial_i,:] = [ 9. 5. 27. 32.]
415 cord_individual_obj[indivial_i,:] = [10. 6. 34. 40.]

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416 cord_individual_obj[indivial_i,:] = [11. 6. 4. 10.]
417 cord_individual_obj[indivial_i,:] = [12. 4. 3. 7.]
418 cord_individual_obj[indivial_i,:] = [13. 6. 41. 47.]
419 cord_individual_obj[indivial_i,:] = [14. 3. 94. 97.]
420 cord_individual_obj[indivial_i,:] = [15. 4. 35. 39.]
421 cord_individual_obj[indivial_i,:] = [16. 7. 38. 45.]
422 cord_individual_obj[indivial_i,:] = [17. 4. 62. 66.]
423 cord_individual_obj[indivial_i,:] = [18. 3. 18. 21.]
424 cord_individual_obj[indivial_i,:] = [19. 3. 43. 46.]
425 cord_individual_obj[indivial_i,:] = [20. 5. 64. 69.]
426 cord_individual_obj[indivial_i,:] = [21. 5. 6. 11.]
427 cord_individual_obj[indivial_i,:] = [22. 5. 94. 99.]
428 cord_individual_obj[indivial_i,:] = [23. 5. 54. 59.]
429 cord_individual_obj[indivial_i,:] = [24. 5. 64. 69.]
430
431 min(cord_individual_obj[:,3]) = 7.0
432 histol_G_best_iter[iter,3] = 7.0
433 Begin iteration:
434
435 iter = 13
436 cord_individual_obj[indivial_i,:] = [ 0. 5. 31. 36.]
437 cord_individual_obj[indivial_i,:] = [1. 4. 3. 7.]
438 cord_individual_obj[indivial_i,:] = [ 2. 4. 52. 56.]
439 cord_individual_obj[indivial_i,:] = [ 3. 5. 42. 47.]
440 cord_individual_obj[indivial_i,:] = [ 4. 6. 60. 66.]
441 cord_individual_obj[indivial_i,:] = [ 5. 5. 25. 30.]
442 cord_individual_obj[indivial_i,:] = [ 6. 3. 120. 123.]
443 cord_individual_obj[indivial_i,:] = [ 7. 6. 23. 29.]
444 cord_individual_obj[indivial_i,:] = [ 8. 4. 20. 24.]
445 cord_individual_obj[indivial_i,:] = [ 9. 5. 21. 26.]
446 cord_individual_obj[indivial_i,:] = [10. 6. 34. 40.]
447 cord_individual_obj[indivial_i,:] = [11. 5. 134. 139.]
448 cord_individual_obj[indivial_i,:] = [12. 3. 108. 111.]
449 cord_individual_obj[indivial_i,:] = [13. 4. 66. 70.]
450 cord_individual_obj[indivial_i,:] = [14. 5. 45. 50.]
451 cord_individual_obj[indivial_i,:] = [15. 4. 21. 25.]
452 cord_individual_obj[indivial_i,:] = [16. 6. 8. 14.]
453 cord_individual_obj[indivial_i,:] = [17. 4. 54. 58.]
454 cord_individual_obj[indivial_i,:] = [18. 4. 19. 23.]
455 cord_individual_obj[indivial_i,:] = [19. 3. 43. 46.]
456 cord_individual_obj[indivial_i,:] = [20. 6. 6. 12.]
457 cord_individual_obj[indivial_i,:] = [21. 6. 6. 12.]
458 cord_individual_obj[indivial_i,:] = [22. 4. 130. 134.]
459 cord_individual_obj[indivial_i,:] = [23. 4. 66. 70.]
460 cord_individual_obj[indivial_i,:] = [24. 5. 36. 41.]
461
462 min(cord_individual_obj[:,3]) = 7.0
463 histol_G_best_iter[iter,3] = 7.0
464 Begin iteration:
465
466 iter = 14
467 cord_individual_obj[indivial_i,:] = [ 0. 6. 59. 65.]
468 cord_individual_obj[indivial_i,:] = [ 1. 4. 84. 88.]
469 cord_individual_obj[indivial_i,:] = [ 2. 4. 78. 82.]
470 cord_individual_obj[indivial_i,:] = [ 3. 5. 64. 69.]
471 cord_individual_obj[indivial_i,:] = [ 4. 4. 116. 120.]
472 cord_individual_obj[indivial_i,:] = [ 5. 4. 24. 28.]
473 cord_individual_obj[indivial_i,:] = [ 6. 3. 156. 159.]
474 cord_individual_obj[indivial_i,:] = [ 7. 4. 21. 25.]
475 cord_individual_obj[indivial_i,:] = [ 8. 5. 20. 25.]
476 cord_individual_obj[indivial_i,:] = [ 9. 3. 24. 27.]
477 cord_individual_obj[indivial_i,:] = [10. 4. 58. 62.]
478 cord_individual_obj[indivial_i,:] = [11. 4. 3. 7.]
479 cord_individual_obj[indivial_i,:] = [12. 3. 154. 157.]
480 cord_individual_obj[indivial_i,:] = [13. 5. 43. 48.]
481 cord_individual_obj[indivial_i,:] = [14. 4. 166. 170.]
482 cord_individual_obj[indivial_i,:] = [15. 5. 44. 49.]
483 cord_individual_obj[indivial_i,:] = [16. 5. 54. 59.]
484 cord_individual_obj[indivial_i,:] = [17. 4. 54. 58.]
485 cord_individual_obj[indivial_i,:] = [18. 4. 124. 128.]
486 cord_individual_obj[indivial_i,:] = [19. 4. 43. 47.]
487 cord_individual_obj[indivial_i,:] = [20. 5. 20. 25.]
488 cord_individual_obj[indivial_i,:] = [21. 4. 4. 8.]
489 cord_individual_obj[indivial_i,:] = [22. 5. 158. 163.]
490 cord_individual_obj[indivial_i,:] = [23. 4. 3. 7.]
491 cord_individual_obj[indivial_i,:] = [24. 5. 56. 61.]
492
493 min(cord_individual_obj[:,3]) = 7.0
494 histol_G_best_iter[iter,3] = 7.0
495 Begin iteration:
496
497 iter = 15
498 cord_individual_obj[indivial_i,:] = [ 0. 4. 58. 62.]
499 cord_individual_obj[indivial_i,:] = [ 1. 3. 35. 38.]

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500 cord_individual_obj[indivial_i,:] = [ 2. 3. 92. 95.]
501 cord_individual_obj[indivial_i,:] = [ 3. 6. 58. 64.]
502 cord_individual_obj[indivial_i,:] = [ 4. 3. 10. 13.]
503 cord_individual_obj[indivial_i,:] = [ 5. 5. 25. 30.]
504 cord_individual_obj[indivial_i,:] = [ 6. 5. 44. 49.]
505 cord_individual_obj[indivial_i,:] = [ 7. 5. 37. 42.]
506 cord_individual_obj[indivial_i,:] = [ 8. 4. 20. 24.]
507 cord_individual_obj[indivial_i,:] = [ 9. 6. 21. 27.]
508 cord_individual_obj[indivial_i,:] = [10. 4. 58. 62.]
509 cord_individual_obj[indivial_i,:] = [11. 5. 134. 139.]
510 cord_individual_obj[indivial_i,:] = [12. 2. 99. 101.]
511 cord_individual_obj[indivial_i,:] = [13. 6. 41. 47.]
512 cord_individual_obj[indivial_i,:] = [14. 4. 3. 7.]
513 cord_individual_obj[indivial_i,:] = [15. 4. 31. 35.]
514 cord_individual_obj[indivial_i,:] = [16. 5. 20. 25.]
515 cord_individual_obj[indivial_i,:] = [17. 4. 74. 78.]
516 cord_individual_obj[indivial_i,:] = [18. 3. 118. 121.]
517 cord_individual_obj[indivial_i,:] = [19. 5. 55. 60.]
518 cord_individual_obj[indivial_i,:] = [20. 6. 4. 10.]
519 cord_individual_obj[indivial_i,:] = [21. 5. 4. 9.]
520 cord_individual_obj[indivial_i,:] = [22. 3. 115. 118.]
521 cord_individual_obj[indivial_i,:] = [23. 5. 4. 9.]
522 cord_individual_obj[indivial_i,:] = [24. 5. 50. 55.]
523
524 min(cord_individual_obj[:,3]) = 7.0
525 histol_G_best_iter[iter,3] = 7.0
526 Begin iteration:
527
528 iter = 16
529 cord_individual_obj[indivial_i,:] = [ 0. 3. 67. 70.]
530 cord_individual_obj[indivial_i,:] = [ 1. 4. 66. 70.]
531 cord_individual_obj[indivial_i,:] = [ 2. 3. 34. 37.]
532 cord_individual_obj[indivial_i,:] = [ 3. 4. 76. 80.]
533 cord_individual_obj[indivial_i,:] = [ 4. 4. 82. 86.]
534 cord_individual_obj[indivial_i,:] = [ 5. 3. 92. 95.]
535 cord_individual_obj[indivial_i,:] = [ 6. 4. 27. 31.]
536 cord_individual_obj[indivial_i,:] = [ 7. 3. 108. 111.]
537 cord_individual_obj[indivial_i,:] = [ 8. 5. 62. 67.]
538 cord_individual_obj[indivial_i,:] = [ 9. 4. 10. 14.]
539 cord_individual_obj[indivial_i,:] = [10. 5. 102. 107.]
540 cord_individual_obj[indivial_i,:] = [11. 4. 3. 7.]
541 cord_individual_obj[indivial_i,:] = [12. 4. 12. 16.]
542 cord_individual_obj[indivial_i,:] = [13. 5. 126. 131.]
543 cord_individual_obj[indivial_i,:] = [14. 4. 58. 62.]
544 cord_individual_obj[indivial_i,:] = [15. 3. 71. 74.]
545 cord_individual_obj[indivial_i,:] = [16. 5. 90. 95.]
546 cord_individual_obj[indivial_i,:] = [17. 3. 119. 122.]
547 cord_individual_obj[indivial_i,:] = [18. 4. 108. 112.]
548 cord_individual_obj[indivial_i,:] = [19. 3. 76. 79.]
549 cord_individual_obj[indivial_i,:] = [20. 4. 38. 42.]
550 cord_individual_obj[indivial_i,:] = [21. 3. 25. 28.]
551 cord_individual_obj[indivial_i,:] = [22. 5. 52. 57.]
552 cord_individual_obj[indivial_i,:] = [23. 5. 78. 83.]
553 cord_individual_obj[indivial_i,:] = [24. 4. 48. 52.]
554
555 min(cord_individual_obj[:,3]) = 7.0
556 histol_G_best_iter[iter,3] = 7.0
557 Begin iteration:
558
559 iter = 17
560 cord_individual_obj[indivial_i,:] = [ 0. 3. 61. 64.]
561 cord_individual_obj[indivial_i,:] = [ 1. 5. 25. 30.]
562 cord_individual_obj[indivial_i,:] = [ 2. 3. 46. 49.]
563 cord_individual_obj[indivial_i,:] = [ 3. 3. 82. 85.]
564 cord_individual_obj[indivial_i,:] = [ 4. 4. 84. 88.]
565 cord_individual_obj[indivial_i,:] = [ 5. 3. 72. 75.]
566 cord_individual_obj[indivial_i,:] = [ 6. 4. 70. 74.]
567 cord_individual_obj[indivial_i,:] = [ 7. 6. 9. 15.]
568 cord_individual_obj[indivial_i,:] = [ 8. 5. 8. 13.]
569 cord_individual_obj[indivial_i,:] = [ 9. 4. 10. 14.]
570 cord_individual_obj[indivial_i,:] = [10. 3. 18. 21.]
571 cord_individual_obj[indivial_i,:] = [11. 5. 134. 139.]
572 cord_individual_obj[indivial_i,:] = [12. 4. 45. 49.]
573 cord_individual_obj[indivial_i,:] = [13. 4. 3. 7.]
574 cord_individual_obj[indivial_i,:] = [14. 3. 104. 107.]
575 cord_individual_obj[indivial_i,:] = [15. 7. 14. 21.]
576 cord_individual_obj[indivial_i,:] = [16. 3. 21. 24.]
577 cord_individual_obj[indivial_i,:] = [17. 3. 38. 41.]
578 cord_individual_obj[indivial_i,:] = [18. 6. 38. 44.]
579 cord_individual_obj[indivial_i,:] = [19. 5. 21. 26.]
580 cord_individual_obj[indivial_i,:] = [20. 5. 84. 89.]
581 cord_individual_obj[indivial_i,:] = [21. 5. 81. 86.]
582 cord_individual_obj[indivial_i,:] = [22. 3. 88. 91.]
583 cord_individual_obj[indivial_i,:] = [23. 5. 9. 14.]

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unknown

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584     cord_individual_obj[indivial_i, :] = [24. 5. 13. 18.]  
585  
586     min(cord_individual_obj[:, 3]) = 7.0  
587     historl_G_best_iter[iter, 3] = 7.0  
588 Begin iteration:  
589  
590 iter = 18  
591     cord_individual_obj[indivial_i, :] = [ 0. 6. 31. 37.]  
592     cord_individual_obj[indivial_i, :] = [ 1. 3. 67. 70.]  
593     cord_individual_obj[indivial_i, :] = [ 2. 6. 4. 10.]  
594     cord_individual_obj[indivial_i, :] = [ 3. 4. 74. 78.]  
595     cord_individual_obj[indivial_i, :] = [ 4. 6. 5. 11.]  
596     cord_individual_obj[indivial_i, :] = [ 5. 5. 25. 30.]  
597     cord_individual_obj[indivial_i, :] = [ 6. 6. 27. 33.]  
598     cord_individual_obj[indivial_i, :] = [ 7. 3. 108. 111.]  
599     cord_individual_obj[indivial_i, :] = [ 8. 6. 84. 90.]  
600     cord_individual_obj[indivial_i, :] = [ 9. 4. 66. 70.]  
601     cord_individual_obj[indivial_i, :] = [10. 5. 3. 8.]  
602     cord_individual_obj[indivial_i, :] = [11. 4. 3. 7.]  
603     cord_individual_obj[indivial_i, :] = [12. 4. 19. 23.]  
604     cord_individual_obj[indivial_i, :] = [13. 5. 114. 119.]  
605     cord_individual_obj[indivial_i, :] = [14. 3. 89. 92.]  
606     cord_individual_obj[indivial_i, :] = [15. 5. 62. 67.]  
607     cord_individual_obj[indivial_i, :] = [16. 5. 44. 49.]  
608     cord_individual_obj[indivial_i, :] = [17. 3. 58. 61.]  
609     cord_individual_obj[indivial_i, :] = [18. 3. 26. 29.]  
610     cord_individual_obj[indivial_i, :] = [19. 3. 108. 111.]  
611     cord_individual_obj[indivial_i, :] = [20. 6. 4. 10.]  
612     cord_individual_obj[indivial_i, :] = [21. 5. 62. 67.]  
613     cord_individual_obj[indivial_i, :] = [22. 5. 140. 145.]  
614     cord_individual_obj[indivial_i, :] = [23. 3. 108. 111.]  
615     cord_individual_obj[indivial_i, :] = [24. 5. 64. 69.]  
616  
617     min(cord_individual_obj[:, 3]) = 7.0  
618     historl_G_best_iter[iter, 3] = 7.0  
619 Begin iteration:  
620  
621 iter = 19  
622     cord_individual_obj[indivial_i, :] = [ 0. 3. 57. 60.]  
623     cord_individual_obj[indivial_i, :] = [ 1. 6. 8. 14.]  
624     cord_individual_obj[indivial_i, :] = [ 2. 4. 66. 70.]  
625     cord_individual_obj[indivial_i, :] = [ 3. 5. 64. 69.]  
626     cord_individual_obj[indivial_i, :] = [ 4. 6. 60. 66.]  
627     cord_individual_obj[indivial_i, :] = [ 5. 4. 25. 29.]  
628     cord_individual_obj[indivial_i, :] = [ 6. 4. 43. 47.]  
629     cord_individual_obj[indivial_i, :] = [ 7. 5. 18. 23.]  
630     cord_individual_obj[indivial_i, :] = [ 8. 5. 42. 47.]  
631     cord_individual_obj[indivial_i, :] = [ 9. 3. 20. 23.]  
632     cord_individual_obj[indivial_i, :] = [10. 7. 24. 31.]  
633     cord_individual_obj[indivial_i, :] = [11. 7. 78. 85.]  
634     cord_individual_obj[indivial_i, :] = [12. 4. 86. 90.]  
635     cord_individual_obj[indivial_i, :] = [13. 6. 19. 25.]  
636     cord_individual_obj[indivial_i, :] = [14. 3. 88. 91.]  
637     cord_individual_obj[indivial_i, :] = [15. 5. 32. 37.]  
638     cord_individual_obj[indivial_i, :] = [16. 5. 36. 41.]  
639     cord_individual_obj[indivial_i, :] = [17. 5. 48. 53.]  
640     cord_individual_obj[indivial_i, :] = [18. 4. 205. 209.]  
641     cord_individual_obj[indivial_i, :] = [19. 7. 48. 55.]  
642     cord_individual_obj[indivial_i, :] = [20. 5. 44. 49.]  
643     cord_individual_obj[indivial_i, :] = [21. 5. 72. 77.]  
644     cord_individual_obj[indivial_i, :] = [22. 4. 3. 7.]  
645     cord_individual_obj[indivial_i, :] = [23. 4. 72. 76.]  
646     cord_individual_obj[indivial_i, :] = [24. 5. 36. 41.]  
647  
648     min(cord_individual_obj[:, 3]) = 7.0  
649     historl_G_best_iter[iter, 3] = 7.0  
650 Begin iteration:  
651  
652 iter = 20  
653     cord_individual_obj[indivial_i, :] = [ 0. 3. 99. 102.]  
654     cord_individual_obj[indivial_i, :] = [1. 4. 4. 8.]  
655     cord_individual_obj[indivial_i, :] = [ 2. 3. 106. 109.]  
656     cord_individual_obj[indivial_i, :] = [ 3. 5. 9. 14.]  
657     cord_individual_obj[indivial_i, :] = [ 4. 4. 80. 84.]  
658     cord_individual_obj[indivial_i, :] = [ 5. 3. 92. 95.]  
659     cord_individual_obj[indivial_i, :] = [ 6. 5. 120. 125.]  
660     cord_individual_obj[indivial_i, :] = [ 7. 4. 70. 74.]  
661     cord_individual_obj[indivial_i, :] = [ 8. 6. 57. 63.]  
662     cord_individual_obj[indivial_i, :] = [ 9. 6. 21. 27.]  
663     cord_individual_obj[indivial_i, :] = [10. 5. 56. 61.]  
664     cord_individual_obj[indivial_i, :] = [11. 6. 7. 13.]  
665     cord_individual_obj[indivial_i, :] = [12. 5. 7. 12.]  
666     cord_individual_obj[indivial_i, :] = [13. 3. 48. 51.]  
667     cord_individual_obj[indivial_i, :] = [14. 5. 126. 131.]
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668 cord_individual_obj[indivial_i, :] = [15. 4. 20. 24.]
669 cord_individual_obj[indivial_i, :] = [16. 6. 6. 12.]
670 cord_individual_obj[indivial_i, :] = [17. 3. 38. 41.]
671 cord_individual_obj[indivial_i, :] = [18. 4. 3. 7.]
672 cord_individual_obj[indivial_i, :] = [19. 5. 21. 26.]
673 cord_individual_obj[indivial_i, :] = [20. 3. 58. 61.]
674 cord_individual_obj[indivial_i, :] = [21. 5. 58. 63.]
675 cord_individual_obj[indivial_i, :] = [22. 3. 121. 124.]
676 cord_individual_obj[indivial_i, :] = [23. 5. 10. 15.]
677 cord_individual_obj[indivial_i, :] = [24. 4. 88. 92.]
678
679 min(cord_individual_obj[:, 3]) = 7.0
680 historl_G_best_iter[iter, 3] = 7.0
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: [ 8. 3. 6.5 2. 24. 12. 17.5]
692     time: [0. 0. 2. 1. 0. 0. 0.]
693     num_QC: [4. 5. 4. 2. 2. 3. 7.]
694 Objective function values and some other indicators:
695 Obj0 = 4.00          Obj1 = 3.00          Obj0 + Obj1 = 7.00
696 Total movement of crane: 0.00
697 Total waiting time in berth position: 3.00
698 Total index of q during berthing: 420.00
699 Specific arrangement for each vessel:
700
    V_id: 0           li: 4.0           xi: 8.0           bow of i: 6.0           tail of i: 10.0           gama_i0: 0.0           gama_i1: 1.0
    .               gama_i1 + 1: 2.0       gama_i1 - gama_i0: 1.0
100.0           work load gap_i: 0
701
    V_id: 1           li: 6.0           xi: 3.0           bow of i: 0.0           tail of i: 6.0           gama_i0: 0.0           gama_i1: 0.0
    .               gama_i1 + 1: 1.0       gama_i1 - gama_i0: 0.0
100.0           work load gap_i: 0
702
    V_id: 2           li: 5.0           xi: 6.5           bow of i: 4.0           tail of i: 9.0           gama_i0: 2.0           gama_i1: 3.0
    .               gama_i1 + 1: 4.0       gama_i1 - gama_i0: 1.0
140.0           work load gap_i: 0
703
    V_id: 3           li: 4.0           xi: 2.0           bow of i: 0.0           tail of i: 4.0           gama_i0: 1.0           gama_i1: 4.0
    .               gama_i1 + 1: 5.0       gama_i1 - gama_i0: 3.0
140.0           work load gap_i: 0
704
    V_id: 4           li: 6.0           xi: 24.0           bow of i: 21.0           tail of i: 27.0           gama_i0: 0.0           gama_i1: 3
    .               gama_i1 + 1: 4.0       gama_i1 - gama_i0: 3.0
load_i: 160.0   work load gap_i: 0
705
    V_id: 5           li: 4.0           xi: 12.0           bow of i: 10.0           tail of i: 14.0           gama_i0: 0.0           gama_i1: 1
    .               gama_i1 + 1: 2.0       gama_i1 - gama_i0: 1.0
load_i: 80.0    work load gap_i: 0
706
    V_id: 6           li: 7.0           xi: 17.5           bow of i: 14.0           tail of i: 21.0           gama_i0: 0.0           gama_i1: 0
    .               gama_i1 + 1: 1.0       gama_i1 - gama_i0: 0.0
load_i: 140.0   work load gap_i: 0
707
708 Algorithm finished and the total CPU time: 197 s
709 End
710

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