

unknown

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80  cord_individual_obj[indivial_i,:] = [17. 4. 26. 30.]
81  cord_individual_obj[indivial_i,:] = [18. 5. 26. 31.]
82  cord_individual_obj[indivial_i,:] = [19. 4. 16. 20.]
83  cord_individual_obj[indivial_i,:] = [20. 4. 50. 54.]
84  cord_individual_obj[indivial_i,:] = [21. 6. 44. 50.]
85  cord_individual_obj[indivial_i,:] = [22. 4. 60. 64.]
86  cord_individual_obj[indivial_i,:] = [23. 6. 40. 46.]
87  cord_individual_obj[indivial_i,:] = [24. 6. 38. 44.]
88
89 min(cord_individual_obj[:,3]) = 13.0
90 historl_G_best_iter[iter,3] = 13.0
91 Begin iteration:
92
93 iter = 2
94  cord_individual_obj[indivial_i,:] = [ 0. 5. 28. 33.]
95  cord_individual_obj[indivial_i,:] = [ 1. 5. 36. 41.]
96  cord_individual_obj[indivial_i,:] = [ 2. 4. 38. 42.]
97  cord_individual_obj[indivial_i,:] = [ 3. 6. 56. 62.]
98  cord_individual_obj[indivial_i,:] = [ 4. 5. 28. 33.]
99  cord_individual_obj[indivial_i,:] = [ 5. 6. 26. 32.]
100 cord_individual_obj[indivial_i,:] = [ 6. 4. 12. 16.]
101 cord_individual_obj[indivial_i,:] = [ 7. 5. 72. 77.]
102 cord_individual_obj[indivial_i,:] = [ 8. 4. 44. 48.]
103 cord_individual_obj[indivial_i,:] = [ 9. 6. 84. 90.]
104 cord_individual_obj[indivial_i,:] = [10. 5. 34. 39.]
105 cord_individual_obj[indivial_i,:] = [11. 5. 58. 63.]
106 cord_individual_obj[indivial_i,:] = [12. 4. 26. 30.]
107 cord_individual_obj[indivial_i,:] = [13. 4. 36. 40.]
108 cord_individual_obj[indivial_i,:] = [14. 5. 68. 73.]
109 cord_individual_obj[indivial_i,:] = [15. 4. 60. 64.]
110 cord_individual_obj[indivial_i,:] = [16. 5. 8. 13.]
111 cord_individual_obj[indivial_i,:] = [17. 4. 8. 12.]
112 cord_individual_obj[indivial_i,:] = [18. 5. 32. 37.]
113 cord_individual_obj[indivial_i,:] = [19. 5. 20. 25.]
114 cord_individual_obj[indivial_i,:] = [20. 6. 58. 64.]
115 cord_individual_obj[indivial_i,:] = [21. 6. 12. 18.]
116 cord_individual_obj[indivial_i,:] = [22. 4. 24. 28.]
117 cord_individual_obj[indivial_i,:] = [23. 6. 18. 24.]
118 cord_individual_obj[indivial_i,:] = [24. 6. 34. 40.]
119
120 min(cord_individual_obj[:,3]) = 12.0
121 historl_G_best_iter[iter,3] = 12.0
122 Begin iteration:
123
124 iter = 3
125  cord_individual_obj[indivial_i,:] = [ 0. 4. 60. 64.]
126  cord_individual_obj[indivial_i,:] = [ 1. 4. 72. 76.]
127  cord_individual_obj[indivial_i,:] = [ 2. 5. 54. 59.]
128  cord_individual_obj[indivial_i,:] = [ 3. 5. 36. 41.]
129  cord_individual_obj[indivial_i,:] = [ 4. 5. 38. 43.]
130  cord_individual_obj[indivial_i,:] = [ 5. 6. 8. 14.]
131  cord_individual_obj[indivial_i,:] = [ 6. 4. 72. 76.]
132  cord_individual_obj[indivial_i,:] = [ 7. 5. 48. 53.]
133  cord_individual_obj[indivial_i,:] = [ 8. 5. 28. 33.]
134  cord_individual_obj[indivial_i,:] = [ 9. 4. 8. 12.]
135  cord_individual_obj[indivial_i,:] = [10. 4. 56. 60.]
136  cord_individual_obj[indivial_i,:] = [11. 6. 76. 82.]
137  cord_individual_obj[indivial_i,:] = [12. 5. 26. 31.]
138  cord_individual_obj[indivial_i,:] = [13. 6. 32. 38.]
139  cord_individual_obj[indivial_i,:] = [14. 5. 16. 21.]
140  cord_individual_obj[indivial_i,:] = [15. 6. 28. 34.]
141  cord_individual_obj[indivial_i,:] = [16. 5. 38. 43.]
142  cord_individual_obj[indivial_i,:] = [17. 6. 8. 14.]
143  cord_individual_obj[indivial_i,:] = [18. 5. 8. 13.]
144  cord_individual_obj[indivial_i,:] = [19. 5. 16. 21.]
145  cord_individual_obj[indivial_i,:] = [20. 5. 42. 47.]
146  cord_individual_obj[indivial_i,:] = [21. 6. 8. 14.]
147  cord_individual_obj[indivial_i,:] = [22. 4. 60. 64.]
148  cord_individual_obj[indivial_i,:] = [23. 5. 52. 57.]
149  cord_individual_obj[indivial_i,:] = [24. 6. 74. 80.]
150
151 min(cord_individual_obj[:,3]) = 12.0
152 historl_G_best_iter[iter,3] = 12.0
153 Begin iteration:
154
155 iter = 4
156  cord_individual_obj[indivial_i,:] = [ 0. 6. 24. 30.]
157  cord_individual_obj[indivial_i,:] = [ 1. 5. 28. 33.]
158  cord_individual_obj[indivial_i,:] = [ 2. 5. 58. 63.]
159  cord_individual_obj[indivial_i,:] = [ 3. 6. 24. 30.]
160  cord_individual_obj[indivial_i,:] = [ 4. 5. 28. 33.]
161  cord_individual_obj[indivial_i,:] = [ 5. 6. 8. 14.]
162  cord_individual_obj[indivial_i,:] = [ 6. 4. 84. 88.]
163  cord_individual_obj[indivial_i,:] = [ 7. 5. 86. 91.]

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164 cord_individual_obj[indivial_i,:] = [ 8. 4. 52. 56.]
165 cord_individual_obj[indivial_i,:] = [ 9. 3. 124. 127.]
166 cord_individual_obj[indivial_i,:] = [10. 4. 66. 70.]
167 cord_individual_obj[indivial_i,:] = [11. 4. 8. 12.]
168 cord_individual_obj[indivial_i,:] = [12. 5. 76. 81.]
169 cord_individual_obj[indivial_i,:] = [13. 4. 34. 38.]
170 cord_individual_obj[indivial_i,:] = [14. 4. 142. 146.]
171 cord_individual_obj[indivial_i,:] = [15. 6. 78. 84.]
172 cord_individual_obj[indivial_i,:] = [16. 4. 100. 104.]
173 cord_individual_obj[indivial_i,:] = [17. 4. 8. 12.]
174 cord_individual_obj[indivial_i,:] = [18. 5. 54. 59.]
175 cord_individual_obj[indivial_i,:] = [19. 5. 32. 37.]
176 cord_individual_obj[indivial_i,:] = [20. 4. 48. 52.]
177 cord_individual_obj[indivial_i,:] = [21. 5. 18. 23.]
178 cord_individual_obj[indivial_i,:] = [22. 4. 52. 56.]
179 cord_individual_obj[indivial_i,:] = [23. 6. 8. 14.]
180 cord_individual_obj[indivial_i,:] = [24. 6. 28. 34.]
181
182 min(cord_individual_obj[:,3]) = 12.0
183 historl_G_best_iter[iter,3] = 12.0
184 Begin iteration:
185
186 iter = 5
187 cord_individual_obj[indivial_i,:] = [ 0. 5. 58. 63.]
188 cord_individual_obj[indivial_i,:] = [ 1. 6. 16. 22.]
189 cord_individual_obj[indivial_i,:] = [ 2. 4. 100. 104.]
190 cord_individual_obj[indivial_i,:] = [ 3. 4. 62. 66.]
191 cord_individual_obj[indivial_i,:] = [ 4. 5. 28. 33.]
192 cord_individual_obj[indivial_i,:] = [ 5. 6. 24. 30.]
193 cord_individual_obj[indivial_i,:] = [ 6. 4. 132. 136.]
194 cord_individual_obj[indivial_i,:] = [ 7. 5. 120. 125.]
195 cord_individual_obj[indivial_i,:] = [ 8. 4. 50. 54.]
196 cord_individual_obj[indivial_i,:] = [ 9. 4. 124. 128.]
197 cord_individual_obj[indivial_i,:] = [10. 4. 94. 98.]
198 cord_individual_obj[indivial_i,:] = [11. 5. 70. 75.]
199 cord_individual_obj[indivial_i,:] = [12. 5. 28. 33.]
200 cord_individual_obj[indivial_i,:] = [13. 6. 24. 30.]
201 cord_individual_obj[indivial_i,:] = [14. 4. 8. 12.]
202 cord_individual_obj[indivial_i,:] = [15. 4. 102. 106.]
203 cord_individual_obj[indivial_i,:] = [16. 5. 126. 131.]
204 cord_individual_obj[indivial_i,:] = [17. 4. 58. 62.]
205 cord_individual_obj[indivial_i,:] = [18. 5. 68. 73.]
206 cord_individual_obj[indivial_i,:] = [19. 5. 16. 21.]
207 cord_individual_obj[indivial_i,:] = [20. 6. 16. 22.]
208 cord_individual_obj[indivial_i,:] = [21. 5. 8. 13.]
209 cord_individual_obj[indivial_i,:] = [22. 5. 24. 29.]
210 cord_individual_obj[indivial_i,:] = [23. 6. 16. 22.]
211 cord_individual_obj[indivial_i,:] = [24. 6. 32. 38.]
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. 24. 30.]
219 cord_individual_obj[indivial_i,:] = [ 1. 5. 58. 63.]
220 cord_individual_obj[indivial_i,:] = [ 2. 5. 32. 37.]
221 cord_individual_obj[indivial_i,:] = [ 3. 6. 24. 30.]
222 cord_individual_obj[indivial_i,:] = [ 4. 5. 32. 37.]
223 cord_individual_obj[indivial_i,:] = [ 5. 6. 8. 14.]
224 cord_individual_obj[indivial_i,:] = [ 6. 4. 8. 12.]
225 cord_individual_obj[indivial_i,:] = [ 7. 5. 108. 113.]
226 cord_individual_obj[indivial_i,:] = [ 8. 5. 28. 33.]
227 cord_individual_obj[indivial_i,:] = [ 9. 4. 102. 106.]
228 cord_individual_obj[indivial_i,:] = [10. 4. 62. 66.]
229 cord_individual_obj[indivial_i,:] = [11. 6. 8. 14.]
230 cord_individual_obj[indivial_i,:] = [12. 4. 46. 50.]
231 cord_individual_obj[indivial_i,:] = [13. 4. 78. 82.]
232 cord_individual_obj[indivial_i,:] = [14. 4. 70. 74.]
233 cord_individual_obj[indivial_i,:] = [15. 4. 60. 64.]
234 cord_individual_obj[indivial_i,:] = [16. 5. 160. 165.]
235 cord_individual_obj[indivial_i,:] = [17. 4. 8. 12.]
236 cord_individual_obj[indivial_i,:] = [18. 5. 54. 59.]
237 cord_individual_obj[indivial_i,:] = [19. 4. 48. 52.]
238 cord_individual_obj[indivial_i,:] = [20. 4. 56. 60.]
239 cord_individual_obj[indivial_i,:] = [21. 5. 8. 13.]
240 cord_individual_obj[indivial_i,:] = [22. 4. 12. 16.]
241 cord_individual_obj[indivial_i,:] = [23. 6. 72. 78.]
242 cord_individual_obj[indivial_i,:] = [24. 6. 28. 34.]
243
244 min(cord_individual_obj[:,3]) = 12.0
245 historl_G_best_iter[iter,3] = 12.0
246 Begin iteration:
247

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248 iter = 7
249 cord_individual_obj[indivial_i, :] = [ 0.  6. 24. 30.]
250 cord_individual_obj[indivial_i, :] = [ 1.  6.  8. 14.]
251 cord_individual_obj[indivial_i, :] = [ 2.  5. 20. 25.]
252 cord_individual_obj[indivial_i, :] = [ 3.  6. 12. 18.]
253 cord_individual_obj[indivial_i, :] = [ 4.  5. 20. 25.]
254 cord_individual_obj[indivial_i, :] = [ 5.  4. 30. 34.]
255 cord_individual_obj[indivial_i, :] = [ 6.  4. 48. 52.]
256 cord_individual_obj[indivial_i, :] = [ 7.  4. 106. 110.]
257 cord_individual_obj[indivial_i, :] = [ 8.  4. 52. 56.]
258 cord_individual_obj[indivial_i, :] = [ 9.  6. 52. 58.]
259 cord_individual_obj[indivial_i, :] = [10. 4. 46. 50.]
260 cord_individual_obj[indivial_i, :] = [11. 5. 64. 69.]
261 cord_individual_obj[indivial_i, :] = [12. 5. 22. 27.]
262 cord_individual_obj[indivial_i, :] = [13. 6. 12. 18.]
263 cord_individual_obj[indivial_i, :] = [14. 4. 70. 74.]
264 cord_individual_obj[indivial_i, :] = [15. 6. 44. 50.]
265 cord_individual_obj[indivial_i, :] = [16. 4. 8. 12.]
266 cord_individual_obj[indivial_i, :] = [17. 4. 50. 54.]
267 cord_individual_obj[indivial_i, :] = [18. 5. 36. 41.]
268 cord_individual_obj[indivial_i, :] = [19. 5. 46. 51.]
269 cord_individual_obj[indivial_i, :] = [20. 5. 70. 75.]
270 cord_individual_obj[indivial_i, :] = [21. 5. 18. 23.]
271 cord_individual_obj[indivial_i, :] = [22. 4. 18. 22.]
272 cord_individual_obj[indivial_i, :] = [23. 6. 44. 50.]
273 cord_individual_obj[indivial_i, :] = [24. 6. 12. 18.]
274
275 min(cord_individual_obj[:, 3]) = 12.0
276 historl_G_best_iter[iter, 3] = 12.0
277 Begin iteration:
278
279 iter = 8
280 cord_individual_obj[indivial_i, :] = [ 0.  5. 32. 37.]
281 cord_individual_obj[indivial_i, :] = [ 1.  5. 70. 75.]
282 cord_individual_obj[indivial_i, :] = [ 2.  4. 36. 40.]
283 cord_individual_obj[indivial_i, :] = [ 3.  6. 52. 58.]
284 cord_individual_obj[indivial_i, :] = [ 4.  5. 20. 25.]
285 cord_individual_obj[indivial_i, :] = [ 5.  4. 24. 28.]
286 cord_individual_obj[indivial_i, :] = [ 6.  4. 68. 72.]
287 cord_individual_obj[indivial_i, :] = [ 7.  4. 8. 12.]
288 cord_individual_obj[indivial_i, :] = [ 8.  4. 52. 56.]
289 cord_individual_obj[indivial_i, :] = [ 9.  4. 114. 118.]
290 cord_individual_obj[indivial_i, :] = [10. 5. 40. 45.]
291 cord_individual_obj[indivial_i, :] = [11. 6. 8. 14.]
292 cord_individual_obj[indivial_i, :] = [12. 5. 60. 65.]
293 cord_individual_obj[indivial_i, :] = [13. 6. 28. 34.]
294 cord_individual_obj[indivial_i, :] = [14. 5. 98. 103.]
295 cord_individual_obj[indivial_i, :] = [15. 6. 98. 104.]
296 cord_individual_obj[indivial_i, :] = [16. 4. 44. 48.]
297 cord_individual_obj[indivial_i, :] = [17. 6. 8. 14.]
298 cord_individual_obj[indivial_i, :] = [18. 5. 36. 41.]
299 cord_individual_obj[indivial_i, :] = [19. 4. 58. 62.]
300 cord_individual_obj[indivial_i, :] = [20. 6. 12. 18.]
301 cord_individual_obj[indivial_i, :] = [21. 5. 18. 23.]
302 cord_individual_obj[indivial_i, :] = [22. 5. 18. 23.]
303 cord_individual_obj[indivial_i, :] = [23. 6. 16. 22.]
304 cord_individual_obj[indivial_i, :] = [24. 6. 12. 18.]
305
306 min(cord_individual_obj[:, 3]) = 12.0
307 historl_G_best_iter[iter, 3] = 12.0
308 Begin iteration:
309
310 iter = 9
311 cord_individual_obj[indivial_i, :] = [ 0.  6. 8. 14.]
312 cord_individual_obj[indivial_i, :] = [ 1.  4. 42. 46.]
313 cord_individual_obj[indivial_i, :] = [ 2.  4. 12. 16.]
314 cord_individual_obj[indivial_i, :] = [ 3.  4. 24. 28.]
315 cord_individual_obj[indivial_i, :] = [ 4.  5. 28. 33.]
316 cord_individual_obj[indivial_i, :] = [ 5.  4. 18. 22.]
317 cord_individual_obj[indivial_i, :] = [ 6.  4. 116. 120.]
318 cord_individual_obj[indivial_i, :] = [ 7.  4. 70. 74.]
319 cord_individual_obj[indivial_i, :] = [ 8.  4. 52. 56.]
320 cord_individual_obj[indivial_i, :] = [ 9.  4. 8. 12.]
321 cord_individual_obj[indivial_i, :] = [10. 5. 42. 47.]
322 cord_individual_obj[indivial_i, :] = [11. 4. 8. 12.]
323 cord_individual_obj[indivial_i, :] = [12. 4. 38. 42.]
324 cord_individual_obj[indivial_i, :] = [13. 4. 74. 78.]
325 cord_individual_obj[indivial_i, :] = [14. 5. 136. 141.]
326 cord_individual_obj[indivial_i, :] = [15. 4. 46. 50.]
327 cord_individual_obj[indivial_i, :] = [16. 4. 132. 136.]
328 cord_individual_obj[indivial_i, :] = [17. 6. 8. 14.]
329 cord_individual_obj[indivial_i, :] = [18. 5. 36. 41.]
330 cord_individual_obj[indivial_i, :] = [19. 3. 80. 83.]
331 cord_individual_obj[indivial_i, :] = [20. 4. 58. 62.]

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332     cord_individual_obj[indivial_i, :] = [21. 5. 24. 29.]
333     cord_individual_obj[indivial_i, :] = [22. 4. 18. 22.]
334     cord_individual_obj[indivial_i, :] = [23. 4. 32. 36.]
335     cord_individual_obj[indivial_i, :] = [24. 6. 12. 18.]
336
337     min(cord_individual_obj[:, 3]) = 12.0
338     historl_G_best_iter[iter, 3] = 12.0
339 Begin iteration:
340
341 iter = 10
342     cord_individual_obj[indivial_i, :] = [ 0. 5. 44. 49.]
343     cord_individual_obj[indivial_i, :] = [ 1. 5. 58. 63.]
344     cord_individual_obj[indivial_i, :] = [ 2. 5. 16. 21.]
345     cord_individual_obj[indivial_i, :] = [ 3. 4. 72. 76.]
346     cord_individual_obj[indivial_i, :] = [ 4. 5. 60. 65.]
347     cord_individual_obj[indivial_i, :] = [ 5. 5. 30. 35.]
348     cord_individual_obj[indivial_i, :] = [ 6. 4. 18. 22.]
349     cord_individual_obj[indivial_i, :] = [ 7. 4. 106. 110.]
350     cord_individual_obj[indivial_i, :] = [ 8. 5. 28. 33.]
351     cord_individual_obj[indivial_i, :] = [ 9. 3. 124. 127.]
352     cord_individual_obj[indivial_i, :] = [10. 5. 46. 51.]
353     cord_individual_obj[indivial_i, :] = [11. 6. 16. 22.]
354     cord_individual_obj[indivial_i, :] = [12. 5. 22. 27.]
355     cord_individual_obj[indivial_i, :] = [13. 5. 28. 33.]
356     cord_individual_obj[indivial_i, :] = [14. 4. 8. 12.]
357     cord_individual_obj[indivial_i, :] = [15. 4. 76. 80.]
358     cord_individual_obj[indivial_i, :] = [16. 4. 48. 52.]
359     cord_individual_obj[indivial_i, :] = [17. 5. 36. 41.]
360     cord_individual_obj[indivial_i, :] = [18. 5. 8. 13.]
361     cord_individual_obj[indivial_i, :] = [19. 4. 36. 40.]
362     cord_individual_obj[indivial_i, :] = [20. 6. 48. 54.]
363     cord_individual_obj[indivial_i, :] = [21. 4. 8. 12.]
364     cord_individual_obj[indivial_i, :] = [22. 5. 18. 23.]
365     cord_individual_obj[indivial_i, :] = [23. 5. 18. 23.]
366     cord_individual_obj[indivial_i, :] = [24. 4. 44. 48.]
367
368     min(cord_individual_obj[:, 3]) = 12.0
369     historl_G_best_iter[iter, 3] = 12.0
370 Begin iteration:
371
372 iter = 11
373     cord_individual_obj[indivial_i, :] = [ 0. 6. 24. 30.]
374     cord_individual_obj[indivial_i, :] = [ 1. 6. 8. 14.]
375     cord_individual_obj[indivial_i, :] = [ 2. 4. 18. 22.]
376     cord_individual_obj[indivial_i, :] = [ 3. 6. 60. 66.]
377     cord_individual_obj[indivial_i, :] = [ 4. 5. 20. 25.]
378     cord_individual_obj[indivial_i, :] = [ 5. 4. 24. 28.]
379     cord_individual_obj[indivial_i, :] = [ 6. 4. 96. 100.]
380     cord_individual_obj[indivial_i, :] = [ 7. 4. 114. 118.]
381     cord_individual_obj[indivial_i, :] = [ 8. 5. 28. 33.]
382     cord_individual_obj[indivial_i, :] = [ 9. 4. 8. 12.]
383     cord_individual_obj[indivial_i, :] = [10. 5. 38. 43.]
384     cord_individual_obj[indivial_i, :] = [11. 5. 52. 57.]
385     cord_individual_obj[indivial_i, :] = [12. 4. 28. 32.]
386     cord_individual_obj[indivial_i, :] = [13. 5. 72. 77.]
387     cord_individual_obj[indivial_i, :] = [14. 4. 70. 74.]
388     cord_individual_obj[indivial_i, :] = [15. 4. 68. 72.]
389     cord_individual_obj[indivial_i, :] = [16. 5. 124. 129.]
390     cord_individual_obj[indivial_i, :] = [17. 4. 24. 28.]
391     cord_individual_obj[indivial_i, :] = [18. 5. 54. 59.]
392     cord_individual_obj[indivial_i, :] = [19. 3. 70. 73.]
393     cord_individual_obj[indivial_i, :] = [20. 6. 28. 34.]
394     cord_individual_obj[indivial_i, :] = [21. 5. 18. 23.]
395     cord_individual_obj[indivial_i, :] = [22. 4. 30. 34.]
396     cord_individual_obj[indivial_i, :] = [23. 6. 8. 14.]
397     cord_individual_obj[indivial_i, :] = [24. 4. 26. 30.]
398
399     min(cord_individual_obj[:, 3]) = 12.0
400     historl_G_best_iter[iter, 3] = 12.0
401 Begin iteration:
402
403 iter = 12
404     cord_individual_obj[indivial_i, :] = [ 0. 6. 24. 30.]
405     cord_individual_obj[indivial_i, :] = [ 1. 5. 70. 75.]
406     cord_individual_obj[indivial_i, :] = [ 2. 5. 16. 21.]
407     cord_individual_obj[indivial_i, :] = [ 3. 5. 48. 53.]
408     cord_individual_obj[indivial_i, :] = [ 4. 4. 28. 32.]
409     cord_individual_obj[indivial_i, :] = [ 5. 4. 26. 30.]
410     cord_individual_obj[indivial_i, :] = [ 6. 4. 90. 94.]
411     cord_individual_obj[indivial_i, :] = [ 7. 4. 130. 134.]
412     cord_individual_obj[indivial_i, :] = [ 8. 5. 28. 33.]
413     cord_individual_obj[indivial_i, :] = [ 9. 6. 28. 34.]
414     cord_individual_obj[indivial_i, :] = [10. 5. 56. 61.]
415     cord_individual_obj[indivial_i, :] = [11. 4. 16. 20.]

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416 cord_individual_obj[indivial_i,:] = [12. 6. 22. 28.]
417 cord_individual_obj[indivial_i,:] = [13. 6. 24. 30.]
418 cord_individual_obj[indivial_i,:] = [14. 4. 106. 110.]
419 cord_individual_obj[indivial_i,:] = [15. 6. 86. 92.]
420 cord_individual_obj[indivial_i,:] = [16. 4. 8. 12.]
421 cord_individual_obj[indivial_i,:] = [17. 4. 70. 74.]
422 cord_individual_obj[indivial_i,:] = [18. 5. 18. 23.]
423 cord_individual_obj[indivial_i,:] = [19. 4. 64. 68.]
424 cord_individual_obj[indivial_i,:] = [20. 5. 28. 33.]
425 cord_individual_obj[indivial_i,:] = [21. 4. 8. 12.]
426 cord_individual_obj[indivial_i,:] = [22. 4. 18. 22.]
427 cord_individual_obj[indivial_i,:] = [23. 5. 82. 87.]
428 cord_individual_obj[indivial_i,:] = [24. 6. 12. 18.]
429
430 min(cord_individual_obj[:,3]) = 12.0
431 histol_G_best_iter[iter,3] = 12.0
432 Begin iteration:
433
434 iter = 13
435 cord_individual_obj[indivial_i,:] = [ 0. 5. 40. 45.]
436 cord_individual_obj[indivial_i,:] = [ 1. 6. 8. 14.]
437 cord_individual_obj[indivial_i,:] = [ 2. 5. 16. 21.]
438 cord_individual_obj[indivial_i,:] = [ 3. 4. 38. 42.]
439 cord_individual_obj[indivial_i,:] = [ 4. 5. 28. 33.]
440 cord_individual_obj[indivial_i,:] = [ 5. 4. 30. 34.]
441 cord_individual_obj[indivial_i,:] = [ 6. 4. 118. 122.]
442 cord_individual_obj[indivial_i,:] = [ 7. 4. 8. 12.]
443 cord_individual_obj[indivial_i,:] = [ 8. 5. 28. 33.]
444 cord_individual_obj[indivial_i,:] = [ 9. 4. 108. 112.]
445 cord_individual_obj[indivial_i,:] = [10. 5. 56. 61.]
446 cord_individual_obj[indivial_i,:] = [11. 6. 44. 50.]
447 cord_individual_obj[indivial_i,:] = [12. 4. 38. 42.]
448 cord_individual_obj[indivial_i,:] = [13. 5. 72. 77.]
449 cord_individual_obj[indivial_i,:] = [14. 4. 98. 102.]
450 cord_individual_obj[indivial_i,:] = [15. 4. 76. 80.]
451 cord_individual_obj[indivial_i,:] = [16. 4. 44. 48.]
452 cord_individual_obj[indivial_i,:] = [17. 6. 8. 14.]
453 cord_individual_obj[indivial_i,:] = [18. 5. 54. 59.]
454 cord_individual_obj[indivial_i,:] = [19. 3. 72. 75.]
455 cord_individual_obj[indivial_i,:] = [20. 5. 84. 89.]
456 cord_individual_obj[indivial_i,:] = [21. 5. 18. 23.]
457 cord_individual_obj[indivial_i,:] = [22. 4. 28. 32.]
458 cord_individual_obj[indivial_i,:] = [23. 5. 44. 49.]
459 cord_individual_obj[indivial_i,:] = [24. 6. 12. 18.]
460
461 min(cord_individual_obj[:,3]) = 12.0
462 histol_G_best_iter[iter,3] = 12.0
463 Begin iteration:
464
465 iter = 14
466 cord_individual_obj[indivial_i,:] = [ 0. 6. 24. 30.]
467 cord_individual_obj[indivial_i,:] = [ 1. 5. 44. 49.]
468 cord_individual_obj[indivial_i,:] = [ 2. 4. 88. 92.]
469 cord_individual_obj[indivial_i,:] = [ 3. 6. 92. 98.]
470 cord_individual_obj[indivial_i,:] = [ 4. 5. 20. 25.]
471 cord_individual_obj[indivial_i,:] = [ 5. 5. 24. 29.]
472 cord_individual_obj[indivial_i,:] = [ 6. 4. 8. 12.]
473 cord_individual_obj[indivial_i,:] = [ 7. 4. 70. 74.]
474 cord_individual_obj[indivial_i,:] = [ 8. 4. 52. 56.]
475 cord_individual_obj[indivial_i,:] = [ 9. 6. 96. 102.]
476 cord_individual_obj[indivial_i,:] = [10. 5. 56. 61.]
477 cord_individual_obj[indivial_i,:] = [11. 4. 16. 20.]
478 cord_individual_obj[indivial_i,:] = [12. 5. 22. 27.]
479 cord_individual_obj[indivial_i,:] = [13. 6. 12. 18.]
480 cord_individual_obj[indivial_i,:] = [14. 4. 146. 150.]
481 cord_individual_obj[indivial_i,:] = [15. 6. 96. 102.]
482 cord_individual_obj[indivial_i,:] = [16. 4. 130. 134.]
483 cord_individual_obj[indivial_i,:] = [17. 4. 36. 40.]
484 cord_individual_obj[indivial_i,:] = [18. 5. 54. 59.]
485 cord_individual_obj[indivial_i,:] = [19. 4. 64. 68.]
486 cord_individual_obj[indivial_i,:] = [20. 6. 28. 34.]
487 cord_individual_obj[indivial_i,:] = [21. 5. 8. 13.]
488 cord_individual_obj[indivial_i,:] = [22. 4. 12. 16.]
489 cord_individual_obj[indivial_i,:] = [23. 6. 16. 22.]
490 cord_individual_obj[indivial_i,:] = [24. 6. 12. 18.]
491
492 min(cord_individual_obj[:,3]) = 12.0
493 histol_G_best_iter[iter,3] = 12.0
494 Begin iteration:
495
496 iter = 15
497 cord_individual_obj[indivial_i,:] = [ 0. 5. 40. 45.]
498 cord_individual_obj[indivial_i,:] = [ 1. 5. 22. 27.]
499 cord_individual_obj[indivial_i,:] = [ 2. 5. 20. 25.]

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500 cord_individual_obj[indivial_i,:] = [ 3. 6. 12. 18.]
501 cord_individual_obj[indivial_i,:] = [ 4. 5. 20. 25.]
502 cord_individual_obj[indivial_i,:] = [ 5. 4. 30. 34.]
503 cord_individual_obj[indivial_i,:] = [ 6. 4. 48. 52.]
504 cord_individual_obj[indivial_i,:] = [ 7. 4. 106. 110.]
505 cord_individual_obj[indivial_i,:] = [ 8. 5. 28. 33.]
506 cord_individual_obj[indivial_i,:] = [ 9. 4. 96. 100.]
507 cord_individual_obj[indivial_i,:] = [10. 4. 70. 74.]
508 cord_individual_obj[indivial_i,:] = [11. 5. 52. 57.]
509 cord_individual_obj[indivial_i,:] = [12. 4. 40. 44.]
510 cord_individual_obj[indivial_i,:] = [13. 6. 24. 30.]
511 cord_individual_obj[indivial_i,:] = [14. 4. 8. 12.]
512 cord_individual_obj[indivial_i,:] = [15. 6. 66. 72.]
513 cord_individual_obj[indivial_i,:] = [16. 5. 94. 99.]
514 cord_individual_obj[indivial_i,:] = [17. 6. 68. 74.]
515 cord_individual_obj[indivial_i,:] = [18. 5. 32. 37.]
516 cord_individual_obj[indivial_i,:] = [19. 3. 80. 83.]
517 cord_individual_obj[indivial_i,:] = [20. 4. 46. 50.]
518 cord_individual_obj[indivial_i,:] = [21. 5. 18. 23.]
519 cord_individual_obj[indivial_i,:] = [22. 4. 18. 22.]
520 cord_individual_obj[indivial_i,:] = [23. 6. 72. 78.]
521 cord_individual_obj[indivial_i,:] = [24. 6. 12. 18.]
522
523 min(cord_individual_obj[:,3]) = 12.0
524 histort_G_best_iter[iter,3] = 12.0
525 Begin iteration:
526
527 iter = 16
528 cord_individual_obj[indivial_i,:] = [ 0. 6. 24. 30.]
529 cord_individual_obj[indivial_i,:] = [ 1. 5. 22. 27.]
530 cord_individual_obj[indivial_i,:] = [ 2. 5. 16. 21.]
531 cord_individual_obj[indivial_i,:] = [ 3. 6. 24. 30.]
532 cord_individual_obj[indivial_i,:] = [ 4. 5. 28. 33.]
533 cord_individual_obj[indivial_i,:] = [ 5. 5. 24. 29.]
534 cord_individual_obj[indivial_i,:] = [ 6. 4. 68. 72.]
535 cord_individual_obj[indivial_i,:] = [ 7. 4. 8. 12.]
536 cord_individual_obj[indivial_i,:] = [ 8. 5. 28. 33.]
537 cord_individual_obj[indivial_i,:] = [ 9. 3. 36. 39.]
538 cord_individual_obj[indivial_i,:] = [10. 4. 70. 74.]
539 cord_individual_obj[indivial_i,:] = [11. 5. 16. 21.]
540 cord_individual_obj[indivial_i,:] = [12. 5. 12. 17.]
541 cord_individual_obj[indivial_i,:] = [13. 5. 98. 103.]
542 cord_individual_obj[indivial_i,:] = [14. 4. 70. 74.]
543 cord_individual_obj[indivial_i,:] = [15. 6. 76. 82.]
544 cord_individual_obj[indivial_i,:] = [16. 5. 72. 77.]
545 cord_individual_obj[indivial_i,:] = [17. 4. 8. 12.]
546 cord_individual_obj[indivial_i,:] = [18. 5. 36. 41.]
547 cord_individual_obj[indivial_i,:] = [19. 4. 64. 68.]
548 cord_individual_obj[indivial_i,:] = [20. 6. 34. 40.]
549 cord_individual_obj[indivial_i,:] = [21. 5. 18. 23.]
550 cord_individual_obj[indivial_i,:] = [22. 5. 18. 23.]
551 cord_individual_obj[indivial_i,:] = [23. 6. 16. 22.]
552 cord_individual_obj[indivial_i,:] = [24. 6. 12. 18.]
553
554 min(cord_individual_obj[:,3]) = 12.0
555 histort_G_best_iter[iter,3] = 12.0
556 Begin iteration:
557
558 iter = 17
559 cord_individual_obj[indivial_i,:] = [ 0. 4. 30. 34.]
560 cord_individual_obj[indivial_i,:] = [ 1. 3. 90. 93.]
561 cord_individual_obj[indivial_i,:] = [ 2. 4. 28. 32.]
562 cord_individual_obj[indivial_i,:] = [ 3. 4. 34. 38.]
563 cord_individual_obj[indivial_i,:] = [ 4. 5. 76. 81.]
564 cord_individual_obj[indivial_i,:] = [ 5. 4. 18. 22.]
565 cord_individual_obj[indivial_i,:] = [ 6. 4. 84. 88.]
566 cord_individual_obj[indivial_i,:] = [ 7. 4. 70. 74.]
567 cord_individual_obj[indivial_i,:] = [ 8. 4. 52. 56.]
568 cord_individual_obj[indivial_i,:] = [ 9. 4. 18. 22.]
569 cord_individual_obj[indivial_i,:] = [10. 4. 86. 90.]
570 cord_individual_obj[indivial_i,:] = [11. 4. 24. 28.]
571 cord_individual_obj[indivial_i,:] = [12. 6. 38. 44.]
572 cord_individual_obj[indivial_i,:] = [13. 4. 8. 12.]
573 cord_individual_obj[indivial_i,:] = [14. 5. 98. 103.]
574 cord_individual_obj[indivial_i,:] = [15. 5. 20. 25.]
575 cord_individual_obj[indivial_i,:] = [16. 5. 108. 113.]
576 cord_individual_obj[indivial_i,:] = [17. 6. 54. 60.]
577 cord_individual_obj[indivial_i,:] = [18. 5. 54. 59.]
578 cord_individual_obj[indivial_i,:] = [19. 6. 12. 18.]
579 cord_individual_obj[indivial_i,:] = [20. 6. 16. 22.]
580 cord_individual_obj[indivial_i,:] = [21. 5. 8. 13.]
581 cord_individual_obj[indivial_i,:] = [22. 4. 18. 22.]
582 cord_individual_obj[indivial_i,:] = [23. 5. 44. 49.]
583 cord_individual_obj[indivial_i,:] = [24. 4. 44. 48.]

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584
585 min(cord_individual_obj[:, 3]) = 12.0
586 historl_G_best_iter[iter, 3] = 12.0
587 Begin iteration:
588
589 iter = 18
590 cord_individual_obj[indivial_i, :] = [ 0.  5. 58. 63.]
591 cord_individual_obj[indivial_i, :] = [ 1.  6. 16. 22.]
592 cord_individual_obj[indivial_i, :] = [ 2.  5. 20. 25.]
593 cord_individual_obj[indivial_i, :] = [ 3.  4. 12. 16.]
594 cord_individual_obj[indivial_i, :] = [ 4.  5. 46. 51.]
595 cord_individual_obj[indivial_i, :] = [ 5.  4. 30. 34.]
596 cord_individual_obj[indivial_i, :] = [ 6.  4. 88. 92.]
597 cord_individual_obj[indivial_i, :] = [ 7.  4. 106. 110.]
598 cord_individual_obj[indivial_i, :] = [ 8.  4. 52. 56.]
599 cord_individual_obj[indivial_i, :] = [ 9.  6. 74. 80.]
600 cord_individual_obj[indivial_i, :] = [10. 5. 58. 63.]
601 cord_individual_obj[indivial_i, :] = [11. 6. 16. 22.]
602 cord_individual_obj[indivial_i, :] = [12. 5. 46. 51.]
603 cord_individual_obj[indivial_i, :] = [13. 6. 8. 14.]
604 cord_individual_obj[indivial_i, :] = [14. 5. 98. 103.]
605 cord_individual_obj[indivial_i, :] = [15. 4. 54. 58.]
606 cord_individual_obj[indivial_i, :] = [16. 4. 8. 12.]
607 cord_individual_obj[indivial_i, :] = [17. 4. 24. 28.]
608 cord_individual_obj[indivial_i, :] = [18. 5. 32. 37.]
609 cord_individual_obj[indivial_i, :] = [19. 5. 20. 25.]
610 cord_individual_obj[indivial_i, :] = [20. 5. 22. 27.]
611 cord_individual_obj[indivial_i, :] = [21. 5. 24. 29.]
612 cord_individual_obj[indivial_i, :] = [22. 4. 52. 56.]
613 cord_individual_obj[indivial_i, :] = [23. 6. 44. 50.]
614 cord_individual_obj[indivial_i, :] = [24. 4. 26. 30.]
615
616 min(cord_individual_obj[:, 3]) = 12.0
617 historl_G_best_iter[iter, 3] = 12.0
618 Begin iteration:
619
620 iter = 19
621 cord_individual_obj[indivial_i, :] = [ 0.  4. 30. 34.]
622 cord_individual_obj[indivial_i, :] = [ 1.  4. 60. 64.]
623 cord_individual_obj[indivial_i, :] = [ 2.  5. 54. 59.]
624 cord_individual_obj[indivial_i, :] = [ 3.  6. 16. 22.]
625 cord_individual_obj[indivial_i, :] = [ 4.  5. 28. 33.]
626 cord_individual_obj[indivial_i, :] = [ 5.  5. 26. 31.]
627 cord_individual_obj[indivial_i, :] = [ 6.  5. 104. 109.]
628 cord_individual_obj[indivial_i, :] = [ 7.  4. 8. 12.]
629 cord_individual_obj[indivial_i, :] = [ 8.  5. 28. 33.]
630 cord_individual_obj[indivial_i, :] = [ 9.  4. 86. 90.]
631 cord_individual_obj[indivial_i, :] = [10. 5. 60. 65.]
632 cord_individual_obj[indivial_i, :] = [11. 5. 16. 21.]
633 cord_individual_obj[indivial_i, :] = [12. 5. 22. 27.]
634 cord_individual_obj[indivial_i, :] = [13. 4. 44. 48.]
635 cord_individual_obj[indivial_i, :] = [14. 5. 136. 141.]
636 cord_individual_obj[indivial_i, :] = [15. 6. 72. 78.]
637 cord_individual_obj[indivial_i, :] = [16. 4. 44. 48.]
638 cord_individual_obj[indivial_i, :] = [17. 6. 62. 68.]
639 cord_individual_obj[indivial_i, :] = [18. 5. 54. 59.]
640 cord_individual_obj[indivial_i, :] = [19. 3. 44. 47.]
641 cord_individual_obj[indivial_i, :] = [20. 4. 38. 42.]
642 cord_individual_obj[indivial_i, :] = [21. 5. 16. 21.]
643 cord_individual_obj[indivial_i, :] = [22. 5. 38. 43.]
644 cord_individual_obj[indivial_i, :] = [23. 6. 8. 14.]
645 cord_individual_obj[indivial_i, :] = [24. 6. 12. 18.]
646
647 min(cord_individual_obj[:, 3]) = 12.0
648 historl_G_best_iter[iter, 3] = 12.0
649 Begin iteration:
650
651 iter = 20
652 cord_individual_obj[indivial_i, :] = [ 0.  5. 30. 35.]
653 cord_individual_obj[indivial_i, :] = [ 1.  6. 16. 22.]
654 cord_individual_obj[indivial_i, :] = [ 2.  4. 34. 38.]
655 cord_individual_obj[indivial_i, :] = [ 3.  4. 56. 60.]
656 cord_individual_obj[indivial_i, :] = [ 4.  5. 58. 63.]
657 cord_individual_obj[indivial_i, :] = [ 5.  4. 28. 32.]
658 cord_individual_obj[indivial_i, :] = [ 6.  4. 28. 32.]
659 cord_individual_obj[indivial_i, :] = [ 7.  4. 70. 74.]
660 cord_individual_obj[indivial_i, :] = [ 8.  5. 28. 33.]
661 cord_individual_obj[indivial_i, :] = [ 9.  6. 88. 94.]
662 cord_individual_obj[indivial_i, :] = [10. 6. 58. 64.]
663 cord_individual_obj[indivial_i, :] = [11. 4. 8. 12.]
664 cord_individual_obj[indivial_i, :] = [12. 6. 42. 48.]
665 cord_individual_obj[indivial_i, :] = [13. 5. 56. 61.]
666 cord_individual_obj[indivial_i, :] = [14. 4. 8. 12.]
667 cord_individual_obj[indivial_i, :] = [15. 5. 34. 39.]

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668 cord_individual_obj[indivial_i, :] = [16. 5. 54. 59.]
669 cord_individual_obj[indivial_i, :] = [17. 4. 26. 30.]
670 cord_individual_obj[indivial_i, :] = [18. 5. 54. 59.]
671 cord_individual_obj[indivial_i, :] = [19. 4. 64. 68.]
672 cord_individual_obj[indivial_i, :] = [20. 4. 68. 72.]
673 cord_individual_obj[indivial_i, :] = [21. 4. 16. 20.]
674 cord_individual_obj[indivial_i, :] = [22. 4. 12. 16.]
675 cord_individual_obj[indivial_i, :] = [23. 4. 52. 56.]
676 cord_individual_obj[indivial_i, :] = [24. 4. 26. 30.]
677
678 min(cord_individual_obj[:, 3]) = 12.0
679 historl_G_best_iter[iter, 3] = 12.0
680 Iteration calculate over
681
682
683
684
685 All item are in Bin and:
686 Bin area = 1080
687 Real_area = 90.0
688 Proportion_of_area = 0.0833333333333333
689 BEST_CHROM =
690     berth: [ 9.5 26. 15. 20.5 1.5 5. ]
691     time: [0. 0. 0. 0. 0. ]
692     num_QC: [2. 2. 3. 3. 2. 3. ]
693 Objective function values and some other indicators:
694 Obj0 = 4.00          Obj1 = 8.00          Obj0 + Obj1 = 12.00
695 Total movement of crane: 8.00
696 Total waiting time in berth position: 0.00
697 Total index of q during berthing: 450.00
698 Specific arrangement for each vessel:
699
700
701
702
703
704
705
706 Algorithm finished and the total CPU time: 191 s
707 End
708

```