

unknown

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80  cord_individual_obj[indivial_i,:] = [17. 5. 12. 17.]
81  cord_individual_obj[indivial_i,:] = [18. 6. 76. 82.]
82  cord_individual_obj[indivial_i,:] = [19. 5. 12. 17.]
83  cord_individual_obj[indivial_i,:] = [20. 4. 36. 40.]
84  cord_individual_obj[indivial_i,:] = [21. 5. 12. 17.]
85  cord_individual_obj[indivial_i,:] = [22. 5. 36. 41.]
86  cord_individual_obj[indivial_i,:] = [23. 4. 12. 16.]
87  cord_individual_obj[indivial_i,:] = [24. 5. 28. 33.]
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. 4. 48. 52.]
95  cord_individual_obj[indivial_i,:] = [ 1. 5. 18. 23.]
96  cord_individual_obj[indivial_i,:] = [ 2. 4. 36. 40.]
97  cord_individual_obj[indivial_i,:] = [ 3. 5. 18. 23.]
98  cord_individual_obj[indivial_i,:] = [ 4. 5. 20. 25.]
99  cord_individual_obj[indivial_i,:] = [ 5. 4. 12. 16.]
100 cord_individual_obj[indivial_i,:] = [ 6. 4. 28. 32.]
101 cord_individual_obj[indivial_i,:] = [ 7. 4. 12. 16.]
102 cord_individual_obj[indivial_i,:] = [ 8. 5. 8. 13.]
103 cord_individual_obj[indivial_i,:] = [ 9. 4. 12. 16.]
104 cord_individual_obj[indivial_i,:] = [10. 5. 8. 13.]
105 cord_individual_obj[indivial_i,:] = [11. 5. 20. 25.]
106 cord_individual_obj[indivial_i,:] = [12. 5. 80. 85.]
107 cord_individual_obj[indivial_i,:] = [13. 4. 54. 58.]
108 cord_individual_obj[indivial_i,:] = [14. 5. 8. 13.]
109 cord_individual_obj[indivial_i,:] = [15. 5. 18. 23.]
110 cord_individual_obj[indivial_i,:] = [16. 4. 20. 24.]
111 cord_individual_obj[indivial_i,:] = [17. 5. 18. 23.]
112 cord_individual_obj[indivial_i,:] = [18. 5. 8. 13.]
113 cord_individual_obj[indivial_i,:] = [19. 4. 18. 22.]
114 cord_individual_obj[indivial_i,:] = [20. 6. 12. 18.]
115 cord_individual_obj[indivial_i,:] = [21. 5. 62. 67.]
116 cord_individual_obj[indivial_i,:] = [22. 4. 20. 24.]
117 cord_individual_obj[indivial_i,:] = [23. 5. 12. 17.]
118 cord_individual_obj[indivial_i,:] = [24. 6. 20. 26.]
119
120 min(cord_individual_obj[:,3]) = 13.0
121 historl_G_best_iter[iter,3] = 13.0
122 Begin iteration:
123
124 iter = 3
125  cord_individual_obj[indivial_i,:] = [ 0. 5. 18. 23.]
126  cord_individual_obj[indivial_i,:] = [ 1. 5. 24. 29.]
127  cord_individual_obj[indivial_i,:] = [ 2. 3. 16. 19.]
128  cord_individual_obj[indivial_i,:] = [ 3. 5. 36. 41.]
129  cord_individual_obj[indivial_i,:] = [ 4. 5. 20. 25.]
130  cord_individual_obj[indivial_i,:] = [ 5. 4. 58. 62.]
131  cord_individual_obj[indivial_i,:] = [ 6. 5. 18. 23.]
132  cord_individual_obj[indivial_i,:] = [ 7. 5. 18. 23.]
133  cord_individual_obj[indivial_i,:] = [ 8. 4. 16. 20.]
134  cord_individual_obj[indivial_i,:] = [ 9. 6. 44. 50.]
135  cord_individual_obj[indivial_i,:] = [10. 6. 8. 14.]
136  cord_individual_obj[indivial_i,:] = [11. 4. 8. 12.]
137  cord_individual_obj[indivial_i,:] = [12. 5. 8. 13.]
138  cord_individual_obj[indivial_i,:] = [13. 5. 12. 17.]
139  cord_individual_obj[indivial_i,:] = [14. 5. 8. 13.]
140  cord_individual_obj[indivial_i,:] = [15. 5. 32. 37.]
141  cord_individual_obj[indivial_i,:] = [16. 5. 12. 17.]
142  cord_individual_obj[indivial_i,:] = [17. 3. 8. 11.]
143  cord_individual_obj[indivial_i,:] = [18. 6. 8. 14.]
144  cord_individual_obj[indivial_i,:] = [19. 4. 12. 16.]
145  cord_individual_obj[indivial_i,:] = [20. 4. 18. 22.]
146  cord_individual_obj[indivial_i,:] = [21. 5. 24. 29.]
147  cord_individual_obj[indivial_i,:] = [22. 4. 104. 108.]
148  cord_individual_obj[indivial_i,:] = [23. 5. 36. 41.]
149  cord_individual_obj[indivial_i,:] = [24. 5. 18. 23.]
150
151 min(cord_individual_obj[:,3]) = 11.0
152 historl_G_best_iter[iter,3] = 11.0
153 Begin iteration:
154
155 iter = 4
156  cord_individual_obj[indivial_i,:] = [ 0. 4. 34. 38.]
157  cord_individual_obj[indivial_i,:] = [ 1. 4. 32. 36.]
158  cord_individual_obj[indivial_i,:] = [ 2. 5. 26. 31.]
159  cord_individual_obj[indivial_i,:] = [ 3. 5. 92. 97.]
160  cord_individual_obj[indivial_i,:] = [ 4. 5. 18. 23.]
161  cord_individual_obj[indivial_i,:] = [ 5. 6. 24. 30.]
162  cord_individual_obj[indivial_i,:] = [ 6. 6. 62. 68.]
163  cord_individual_obj[indivial_i,:] = [ 7. 4. 24. 28.]

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164 cord_individual_obj[indivial_i,:] = [ 8. 5. 8. 13.]
165 cord_individual_obj[indivial_i,:] = [ 9. 6. 24. 30.]
166 cord_individual_obj[indivial_i,:] = [10. 5. 82. 87.]
167 cord_individual_obj[indivial_i,:] = [11. 6. 28. 34.]
168 cord_individual_obj[indivial_i,:] = [12. 5. 24. 29.]
169 cord_individual_obj[indivial_i,:] = [13. 5. 76. 81.]
170 cord_individual_obj[indivial_i,:] = [14. 5. 44. 49.]
171 cord_individual_obj[indivial_i,:] = [15. 5. 8. 13.]
172 cord_individual_obj[indivial_i,:] = [16. 4. 16. 20.]
173 cord_individual_obj[indivial_i,:] = [17. 4. 20. 24.]
174 cord_individual_obj[indivial_i,:] = [18. 6. 8. 14.]
175 cord_individual_obj[indivial_i,:] = [19. 6. 60. 66.]
176 cord_individual_obj[indivial_i,:] = [20. 6. 36. 42.]
177 cord_individual_obj[indivial_i,:] = [21. 6. 62. 68.]
178 cord_individual_obj[indivial_i,:] = [22. 3. 8. 11.]
179 cord_individual_obj[indivial_i,:] = [23. 5. 8. 13.]
180 cord_individual_obj[indivial_i,:] = [24. 6. 56. 62.]
181
182 min(cord_individual_obj[:,3]) = 11.0
183 historl_G_best_iter[iter,3] = 11.0
184 Begin iteration:
185
186 iter = 5
187 cord_individual_obj[indivial_i,:] = [ 0. 5. 18. 23.]
188 cord_individual_obj[indivial_i,:] = [ 1. 3. 44. 47.]
189 cord_individual_obj[indivial_i,:] = [ 2. 4. 44. 48.]
190 cord_individual_obj[indivial_i,:] = [ 3. 3. 8. 11.]
191 cord_individual_obj[indivial_i,:] = [ 4. 3. 48. 51.]
192 cord_individual_obj[indivial_i,:] = [ 5. 5. 20. 25.]
193 cord_individual_obj[indivial_i,:] = [ 6. 4. 46. 50.]
194 cord_individual_obj[indivial_i,:] = [ 7. 5. 12. 17.]
195 cord_individual_obj[indivial_i,:] = [ 8. 4. 30. 34.]
196 cord_individual_obj[indivial_i,:] = [ 9. 3. 20. 23.]
197 cord_individual_obj[indivial_i,:] = [10. 6. 96. 102.]
198 cord_individual_obj[indivial_i,:] = [11. 3. 8. 11.]
199 cord_individual_obj[indivial_i,:] = [12. 4. 12. 16.]
200 cord_individual_obj[indivial_i,:] = [13. 5. 44. 49.]
201 cord_individual_obj[indivial_i,:] = [14. 4. 8. 12.]
202 cord_individual_obj[indivial_i,:] = [15. 4. 24. 28.]
203 cord_individual_obj[indivial_i,:] = [16. 3. 48. 51.]
204 cord_individual_obj[indivial_i,:] = [17. 5. 20. 25.]
205 cord_individual_obj[indivial_i,:] = [18. 4. 24. 28.]
206 cord_individual_obj[indivial_i,:] = [19. 3. 24. 27.]
207 cord_individual_obj[indivial_i,:] = [20. 3. 56. 59.]
208 cord_individual_obj[indivial_i,:] = [21. 4. 20. 24.]
209 cord_individual_obj[indivial_i,:] = [22. 5. 20. 25.]
210 cord_individual_obj[indivial_i,:] = [23. 3. 104. 107.]
211 cord_individual_obj[indivial_i,:] = [24. 3. 24. 27.]
212
213 min(cord_individual_obj[:,3]) = 11.0
214 historl_G_best_iter[iter,3] = 11.0
215 Begin iteration:
216
217 iter = 6
218 cord_individual_obj[indivial_i,:] = [ 0. 4. 12. 16.]
219 cord_individual_obj[indivial_i,:] = [ 1. 4. 16. 20.]
220 cord_individual_obj[indivial_i,:] = [ 2. 5. 26. 31.]
221 cord_individual_obj[indivial_i,:] = [ 3. 4. 8. 12.]
222 cord_individual_obj[indivial_i,:] = [ 4. 5. 54. 59.]
223 cord_individual_obj[indivial_i,:] = [ 5. 6. 68. 74.]
224 cord_individual_obj[indivial_i,:] = [ 6. 6. 36. 42.]
225 cord_individual_obj[indivial_i,:] = [ 7. 5. 24. 29.]
226 cord_individual_obj[indivial_i,:] = [ 8. 5. 8. 13.]
227 cord_individual_obj[indivial_i,:] = [ 9. 6. 8. 14.]
228 cord_individual_obj[indivial_i,:] = [10. 5. 60. 65.]
229 cord_individual_obj[indivial_i,:] = [11. 6. 8. 14.]
230 cord_individual_obj[indivial_i,:] = [12. 5. 52. 57.]
231 cord_individual_obj[indivial_i,:] = [13. 5. 28. 33.]
232 cord_individual_obj[indivial_i,:] = [14. 5. 8. 13.]
233 cord_individual_obj[indivial_i,:] = [15. 5. 8. 13.]
234 cord_individual_obj[indivial_i,:] = [16. 4. 24. 28.]
235 cord_individual_obj[indivial_i,:] = [17. 5. 20. 25.]
236 cord_individual_obj[indivial_i,:] = [18. 6. 8. 14.]
237 cord_individual_obj[indivial_i,:] = [19. 6. 54. 60.]
238 cord_individual_obj[indivial_i,:] = [20. 6. 36. 42.]
239 cord_individual_obj[indivial_i,:] = [21. 6. 16. 22.]
240 cord_individual_obj[indivial_i,:] = [22. 3. 58. 61.]
241 cord_individual_obj[indivial_i,:] = [23. 3. 8. 11.]
242 cord_individual_obj[indivial_i,:] = [24. 6. 38. 44.]
243
244 min(cord_individual_obj[:,3]) = 11.0
245 historl_G_best_iter[iter,3] = 11.0
246 Begin iteration:
247

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248 iter = 7
249 cord_individual_obj[indivial_i, :] = [ 0.  5. 18. 23.]
250 cord_individual_obj[indivial_i, :] = [ 1.  3.  8. 11.]
251 cord_individual_obj[indivial_i, :] = [ 2.  5.  8. 13.]
252 cord_individual_obj[indivial_i, :] = [ 3.  4. 46. 50.]
253 cord_individual_obj[indivial_i, :] = [ 4.  3. 72. 75.]
254 cord_individual_obj[indivial_i, :] = [ 5.  3.  8. 11.]
255 cord_individual_obj[indivial_i, :] = [ 6.  4.  8. 12.]
256 cord_individual_obj[indivial_i, :] = [ 7.  5.  8. 13.]
257 cord_individual_obj[indivial_i, :] = [ 8.  4.  8. 12.]
258 cord_individual_obj[indivial_i, :] = [ 9.  5.  8. 13.]
259 cord_individual_obj[indivial_i, :] = [10.  6. 60. 66.]
260 cord_individual_obj[indivial_i, :] = [11.  5.  8. 13.]
261 cord_individual_obj[indivial_i, :] = [12.  4. 38. 42.]
262 cord_individual_obj[indivial_i, :] = [13.  5. 96. 101.]
263 cord_individual_obj[indivial_i, :] = [14.  4. 12. 16.]
264 cord_individual_obj[indivial_i, :] = [15.  4. 28. 32.]
265 cord_individual_obj[indivial_i, :] = [16.  5. 44. 49.]
266 cord_individual_obj[indivial_i, :] = [17.  5. 62. 67.]
267 cord_individual_obj[indivial_i, :] = [18.  4. 16. 20.]
268 cord_individual_obj[indivial_i, :] = [19.  3. 70. 73.]
269 cord_individual_obj[indivial_i, :] = [20.  4. 50. 54.]
270 cord_individual_obj[indivial_i, :] = [21.  3. 80. 83.]
271 cord_individual_obj[indivial_i, :] = [22.  5. 88. 93.]
272 cord_individual_obj[indivial_i, :] = [23.  4. 36. 40.]
273 cord_individual_obj[indivial_i, :] = [24.  4. 12. 16.]
274
275 min(cord_individual_obj[:, 3]) = 11.0
276 historl_G_best_iter[iter, 3] = 11.0
277 Begin iteration:
278
279 iter = 8
280 cord_individual_obj[indivial_i, :] = [ 0.  5. 36. 41.]
281 cord_individual_obj[indivial_i, :] = [ 1.  4. 56. 60.]
282 cord_individual_obj[indivial_i, :] = [ 2.  3. 18. 21.]
283 cord_individual_obj[indivial_i, :] = [ 3.  4. 54. 58.]
284 cord_individual_obj[indivial_i, :] = [ 4.  4. 48. 52.]
285 cord_individual_obj[indivial_i, :] = [ 5.  4. 36. 40.]
286 cord_individual_obj[indivial_i, :] = [ 6.  4. 26. 30.]
287 cord_individual_obj[indivial_i, :] = [ 7.  5. 44. 49.]
288 cord_individual_obj[indivial_i, :] = [ 8.  5. 54. 59.]
289 cord_individual_obj[indivial_i, :] = [ 9.  6.  8. 14.]
290 cord_individual_obj[indivial_i, :] = [10.  6. 18. 24.]
291 cord_individual_obj[indivial_i, :] = [11.  5. 34. 39.]
292 cord_individual_obj[indivial_i, :] = [12.  4. 94. 98.]
293 cord_individual_obj[indivial_i, :] = [13.  3. 8. 11.]
294 cord_individual_obj[indivial_i, :] = [14.  3. 32. 35.]
295 cord_individual_obj[indivial_i, :] = [15.  3. 88. 91.]
296 cord_individual_obj[indivial_i, :] = [16.  4. 54. 58.]
297 cord_individual_obj[indivial_i, :] = [17.  5. 44. 49.]
298 cord_individual_obj[indivial_i, :] = [18.  6.  8. 14.]
299 cord_individual_obj[indivial_i, :] = [19.  4. 60. 64.]
300 cord_individual_obj[indivial_i, :] = [20.  6.  8. 14.]
301 cord_individual_obj[indivial_i, :] = [21.  4. 68. 72.]
302 cord_individual_obj[indivial_i, :] = [22.  5. 38. 43.]
303 cord_individual_obj[indivial_i, :] = [23.  4. 32. 36.]
304 cord_individual_obj[indivial_i, :] = [24.  6.  8. 14.]
305
306 min(cord_individual_obj[:, 3]) = 11.0
307 historl_G_best_iter[iter, 3] = 11.0
308 Begin iteration:
309
310 iter = 9
311 cord_individual_obj[indivial_i, :] = [ 0.  5. 20. 25.]
312 cord_individual_obj[indivial_i, :] = [ 1.  4. 36. 40.]
313 cord_individual_obj[indivial_i, :] = [ 2.  5. 56. 61.]
314 cord_individual_obj[indivial_i, :] = [ 3.  4. 74. 78.]
315 cord_individual_obj[indivial_i, :] = [ 4.  4. 18. 22.]
316 cord_individual_obj[indivial_i, :] = [ 5.  5. 62. 67.]
317 cord_individual_obj[indivial_i, :] = [ 6.  4. 12. 16.]
318 cord_individual_obj[indivial_i, :] = [ 7.  5. 44. 49.]
319 cord_individual_obj[indivial_i, :] = [ 8.  5. 54. 59.]
320 cord_individual_obj[indivial_i, :] = [ 9.  6.  8. 14.]
321 cord_individual_obj[indivial_i, :] = [10.  6. 44. 50.]
322 cord_individual_obj[indivial_i, :] = [11.  5. 34. 39.]
323 cord_individual_obj[indivial_i, :] = [12.  3.  8. 11.]
324 cord_individual_obj[indivial_i, :] = [13.  5. 54. 59.]
325 cord_individual_obj[indivial_i, :] = [14.  3. 32. 35.]
326 cord_individual_obj[indivial_i, :] = [15.  3. 36. 39.]
327 cord_individual_obj[indivial_i, :] = [16.  4. 32. 36.]
328 cord_individual_obj[indivial_i, :] = [17.  5. 44. 49.]
329 cord_individual_obj[indivial_i, :] = [18.  6.  8. 14.]
330 cord_individual_obj[indivial_i, :] = [19.  4. 12. 16.]
331 cord_individual_obj[indivial_i, :] = [20.  6.  8. 14.]

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332     cord_individual_obj[indivial_i, :] = [21. 4. 30. 34.]
333     cord_individual_obj[indivial_i, :] = [22. 5. 44. 49.]
334     cord_individual_obj[indivial_i, :] = [23. 4. 62. 66.]
335     cord_individual_obj[indivial_i, :] = [24. 6. 8. 14.]
336
337     min(cord_individual_obj[:, 3]) = 11.0
338     historl_G_best_iter[iter, 3] = 11.0
339 Begin iteration:
340
341 iter = 10
342     cord_individual_obj[indivial_i, :] = [ 0. 5. 20. 25.]
343     cord_individual_obj[indivial_i, :] = [ 1. 4. 40. 44.]
344     cord_individual_obj[indivial_i, :] = [ 2. 5. 64. 69.]
345     cord_individual_obj[indivial_i, :] = [ 3. 3. 8. 11.]
346     cord_individual_obj[indivial_i, :] = [ 4. 3. 36. 39.]
347     cord_individual_obj[indivial_i, :] = [ 5. 5. 34. 39.]
348     cord_individual_obj[indivial_i, :] = [ 6. 4. 12. 16.]
349     cord_individual_obj[indivial_i, :] = [ 7. 4. 44. 48.]
350     cord_individual_obj[indivial_i, :] = [ 8. 5. 54. 59.]
351     cord_individual_obj[indivial_i, :] = [ 9. 6. 8. 14.]
352     cord_individual_obj[indivial_i, :] = [10. 6. 44. 50.]
353     cord_individual_obj[indivial_i, :] = [11. 5. 34. 39.]
354     cord_individual_obj[indivial_i, :] = [12. 4. 58. 62.]
355     cord_individual_obj[indivial_i, :] = [13. 5. 74. 79.]
356     cord_individual_obj[indivial_i, :] = [14. 3. 32. 35.]
357     cord_individual_obj[indivial_i, :] = [15. 3. 56. 59.]
358     cord_individual_obj[indivial_i, :] = [16. 4. 20. 24.]
359     cord_individual_obj[indivial_i, :] = [17. 5. 44. 49.]
360     cord_individual_obj[indivial_i, :] = [18. 4. 34. 38.]
361     cord_individual_obj[indivial_i, :] = [19. 4. 12. 16.]
362     cord_individual_obj[indivial_i, :] = [20. 6. 8. 14.]
363     cord_individual_obj[indivial_i, :] = [21. 4. 30. 34.]
364     cord_individual_obj[indivial_i, :] = [22. 5. 44. 49.]
365     cord_individual_obj[indivial_i, :] = [23. 4. 36. 40.]
366     cord_individual_obj[indivial_i, :] = [24. 6. 8. 14.]
367
368     min(cord_individual_obj[:, 3]) = 11.0
369     historl_G_best_iter[iter, 3] = 11.0
370 Begin iteration:
371
372 iter = 11
373     cord_individual_obj[indivial_i, :] = [ 0. 4. 20. 24.]
374     cord_individual_obj[indivial_i, :] = [ 1. 3. 64. 67.]
375     cord_individual_obj[indivial_i, :] = [ 2. 5. 40. 45.]
376     cord_individual_obj[indivial_i, :] = [ 3. 4. 54. 58.]
377     cord_individual_obj[indivial_i, :] = [ 4. 4. 18. 22.]
378     cord_individual_obj[indivial_i, :] = [ 5. 4. 52. 56.]
379     cord_individual_obj[indivial_i, :] = [ 6. 4. 12. 16.]
380     cord_individual_obj[indivial_i, :] = [ 7. 4. 36. 40.]
381     cord_individual_obj[indivial_i, :] = [ 8. 4. 56. 60.]
382     cord_individual_obj[indivial_i, :] = [ 9. 5. 18. 23.]
383     cord_individual_obj[indivial_i, :] = [10. 4. 52. 56.]
384     cord_individual_obj[indivial_i, :] = [11. 5. 52. 57.]
385     cord_individual_obj[indivial_i, :] = [12. 4. 36. 40.]
386     cord_individual_obj[indivial_i, :] = [13. 3. 8. 11.]
387     cord_individual_obj[indivial_i, :] = [14. 3. 56. 59.]
388     cord_individual_obj[indivial_i, :] = [15. 3. 44. 47.]
389     cord_individual_obj[indivial_i, :] = [16. 5. 32. 37.]
390     cord_individual_obj[indivial_i, :] = [17. 4. 20. 24.]
391     cord_individual_obj[indivial_i, :] = [18. 4. 34. 38.]
392     cord_individual_obj[indivial_i, :] = [19. 4. 12. 16.]
393     cord_individual_obj[indivial_i, :] = [20. 4. 18. 22.]
394     cord_individual_obj[indivial_i, :] = [21. 4. 30. 34.]
395     cord_individual_obj[indivial_i, :] = [22. 5. 64. 69.]
396     cord_individual_obj[indivial_i, :] = [23. 3. 36. 39.]
397     cord_individual_obj[indivial_i, :] = [24. 4. 18. 22.]
398
399     min(cord_individual_obj[:, 3]) = 11.0
400     historl_G_best_iter[iter, 3] = 11.0
401 Begin iteration:
402
403 iter = 12
404     cord_individual_obj[indivial_i, :] = [ 0. 5. 36. 41.]
405     cord_individual_obj[indivial_i, :] = [ 1. 4. 50. 54.]
406     cord_individual_obj[indivial_i, :] = [ 2. 3. 18. 21.]
407     cord_individual_obj[indivial_i, :] = [ 3. 4. 68. 72.]
408     cord_individual_obj[indivial_i, :] = [ 4. 4. 36. 40.]
409     cord_individual_obj[indivial_i, :] = [ 5. 4. 16. 20.]
410     cord_individual_obj[indivial_i, :] = [ 6. 6. 36. 42.]
411     cord_individual_obj[indivial_i, :] = [ 7. 5. 38. 43.]
412     cord_individual_obj[indivial_i, :] = [ 8. 5. 8. 13.]
413     cord_individual_obj[indivial_i, :] = [ 9. 6. 18. 24.]
414     cord_individual_obj[indivial_i, :] = [10. 6. 8. 14.]
415     cord_individual_obj[indivial_i, :] = [11. 6. 8. 14.]

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unknown

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416 cord_individual_obj[indivial_i,:] = [12. 4. 18. 22.]  
417 cord_individual_obj[indivial_i,:] = [13. 5. 80. 85.]  
418 cord_individual_obj[indivial_i,:] = [14. 3. 32. 35.]  
419 cord_individual_obj[indivial_i,:] = [15. 3. 56. 59.]  
420 cord_individual_obj[indivial_i,:] = [16. 4. 8. 12.]  
421 cord_individual_obj[indivial_i,:] = [17. 5. 40. 45.]  
422 cord_individual_obj[indivial_i,:] = [18. 6. 8. 14.]  
423 cord_individual_obj[indivial_i,:] = [19. 6. 36. 42.]  
424 cord_individual_obj[indivial_i,:] = [20. 6. 44. 50.]  
425 cord_individual_obj[indivial_i,:] = [21. 6. 8. 14.]  
426 cord_individual_obj[indivial_i,:] = [22. 3. 8. 11.]  
427 cord_individual_obj[indivial_i,:] = [23. 4. 50. 54.]  
428 cord_individual_obj[indivial_i,:] = [24. 6. 8. 14.]  
429  
430 min(cord_individual_obj[:,3]) = 11.0  
431 histol_G_best_iter[iter,3] = 11.0  
432 Begin iteration:  
433  
434 iter = 13  
435 cord_individual_obj[indivial_i,:] = [ 0. 5. 16. 21.]  
436 cord_individual_obj[indivial_i,:] = [ 1. 4. 20. 24.]  
437 cord_individual_obj[indivial_i,:] = [ 2. 5. 24. 29.]  
438 cord_individual_obj[indivial_i,:] = [ 3. 4. 54. 58.]  
439 cord_individual_obj[indivial_i,:] = [ 4. 4. 18. 22.]  
440 cord_individual_obj[indivial_i,:] = [ 5. 5. 52. 57.]  
441 cord_individual_obj[indivial_i,:] = [ 6. 6. 8. 14.]  
442 cord_individual_obj[indivial_i,:] = [ 7. 5. 38. 43.]  
443 cord_individual_obj[indivial_i,:] = [ 8. 5. 54. 59.]  
444 cord_individual_obj[indivial_i,:] = [ 9. 6. 8. 14.]  
445 cord_individual_obj[indivial_i,:] = [10. 6. 24. 30.]  
446 cord_individual_obj[indivial_i,:] = [11. 6. 44. 50.]  
447 cord_individual_obj[indivial_i,:] = [12. 4. 58. 62.]  
448 cord_individual_obj[indivial_i,:] = [13. 3. 8. 11.]  
449 cord_individual_obj[indivial_i,:] = [14. 3. 56. 59.]  
450 cord_individual_obj[indivial_i,:] = [15. 3. 36. 39.]  
451 cord_individual_obj[indivial_i,:] = [16. 5. 66. 71.]  
452 cord_individual_obj[indivial_i,:] = [17. 4. 40. 44.]  
453 cord_individual_obj[indivial_i,:] = [18. 6. 8. 14.]  
454 cord_individual_obj[indivial_i,:] = [19. 6. 36. 42.]  
455 cord_individual_obj[indivial_i,:] = [20. 6. 8. 14.]  
456 cord_individual_obj[indivial_i,:] = [21. 6. 44. 50.]  
457 cord_individual_obj[indivial_i,:] = [22. 5. 76. 81.]  
458 cord_individual_obj[indivial_i,:] = [23. 4. 36. 40.]  
459 cord_individual_obj[indivial_i,:] = [24. 6. 8. 14.]  
460  
461 min(cord_individual_obj[:,3]) = 11.0  
462 histol_G_best_iter[iter,3] = 11.0  
463 Begin iteration:  
464  
465 iter = 14  
466 cord_individual_obj[indivial_i,:] = [ 0. 5. 36. 41.]  
467 cord_individual_obj[indivial_i,:] = [ 1. 3. 56. 59.]  
468 cord_individual_obj[indivial_i,:] = [ 2. 5. 44. 49.]  
469 cord_individual_obj[indivial_i,:] = [ 3. 4. 94. 98.]  
470 cord_individual_obj[indivial_i,:] = [ 4. 3. 36. 39.]  
471 cord_individual_obj[indivial_i,:] = [ 5. 4. 12. 16.]  
472 cord_individual_obj[indivial_i,:] = [ 6. 4. 18. 22.]  
473 cord_individual_obj[indivial_i,:] = [ 7. 5. 44. 49.]  
474 cord_individual_obj[indivial_i,:] = [ 8. 5. 58. 63.]  
475 cord_individual_obj[indivial_i,:] = [ 9. 5. 18. 23.]  
476 cord_individual_obj[indivial_i,:] = [10. 4. 30. 34.]  
477 cord_individual_obj[indivial_i,:] = [11. 5. 18. 23.]  
478 cord_individual_obj[indivial_i,:] = [12. 4. 44. 48.]  
479 cord_individual_obj[indivial_i,:] = [13. 4. 32. 36.]  
480 cord_individual_obj[indivial_i,:] = [14. 3. 36. 39.]  
481 cord_individual_obj[indivial_i,:] = [15. 3. 56. 59.]  
482 cord_individual_obj[indivial_i,:] = [16. 5. 20. 25.]  
483 cord_individual_obj[indivial_i,:] = [17. 4. 40. 44.]  
484 cord_individual_obj[indivial_i,:] = [18. 4. 24. 28.]  
485 cord_individual_obj[indivial_i,:] = [19. 4. 12. 16.]  
486 cord_individual_obj[indivial_i,:] = [20. 5. 34. 39.]  
487 cord_individual_obj[indivial_i,:] = [21. 4. 30. 34.]  
488 cord_individual_obj[indivial_i,:] = [22. 3. 8. 11.]  
489 cord_individual_obj[indivial_i,:] = [23. 3. 36. 39.]  
490 cord_individual_obj[indivial_i,:] = [24. 4. 18. 22.]  
491  
492 min(cord_individual_obj[:,3]) = 11.0  
493 histol_G_best_iter[iter,3] = 11.0  
494 Begin iteration:  
495  
496 iter = 15  
497 cord_individual_obj[indivial_i,:] = [ 0. 5. 36. 41.]  
498 cord_individual_obj[indivial_i,:] = [ 1. 4. 68. 72.]  
499 cord_individual_obj[indivial_i,:] = [ 2. 3. 60. 63.]
```

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500 cord_individual_obj[indivial_i,:] = [ 3. 3. 8. 11.]
501 cord_individual_obj[indivial_i,:] = [ 4. 4. 54. 58.]
502 cord_individual_obj[indivial_i,:] = [ 5. 6. 40. 46.]
503 cord_individual_obj[indivial_i,:] = [ 6. 6. 8. 14.]
504 cord_individual_obj[indivial_i,:] = [ 7. 3. 40. 43.]
505 cord_individual_obj[indivial_i,:] = [ 8. 4. 8. 12.]
506 cord_individual_obj[indivial_i,:] = [ 9. 6. 8. 14.]
507 cord_individual_obj[indivial_i,:] = [10. 4. 18. 22.]
508 cord_individual_obj[indivial_i,:] = [11. 6. 8. 14.]
509 cord_individual_obj[indivial_i,:] = [12. 4. 24. 28.]
510 cord_individual_obj[indivial_i,:] = [13. 3. 102. 105.]
511 cord_individual_obj[indivial_i,:] = [14. 3. 8. 11.]
512 cord_individual_obj[indivial_i,:] = [15. 3. 8. 11.]
513 cord_individual_obj[indivial_i,:] = [16. 4. 16. 20.]
514 cord_individual_obj[indivial_i,:] = [17. 3. 56. 59.]
515 cord_individual_obj[indivial_i,:] = [18. 6. 8. 14.]
516 cord_individual_obj[indivial_i,:] = [19. 6. 38. 44.]
517 cord_individual_obj[indivial_i,:] = [20. 5. 8. 13.]
518 cord_individual_obj[indivial_i,:] = [21. 6. 58. 64.]
519 cord_individual_obj[indivial_i,:] = [22. 5. 64. 69.]
520 cord_individual_obj[indivial_i,:] = [23. 4. 8. 12.]
521 cord_individual_obj[indivial_i,:] = [24. 6. 12. 18.]
522
523 min(cord_individual_obj[:, 3]) = 11.0
524 histort_G_best_iter[iter, 3] = 11.0
525 Begin iteration:
526
527 iter = 16
528 cord_individual_obj[indivial_i,:] = [ 0. 5. 20. 25.]
529 cord_individual_obj[indivial_i,:] = [ 1. 4. 40. 44.]
530 cord_individual_obj[indivial_i,:] = [ 2. 5. 64. 69.]
531 cord_individual_obj[indivial_i,:] = [ 3. 4. 54. 58.]
532 cord_individual_obj[indivial_i,:] = [ 4. 4. 42. 46.]
533 cord_individual_obj[indivial_i,:] = [ 5. 6. 44. 50.]
534 cord_individual_obj[indivial_i,:] = [ 6. 6. 8. 14.]
535 cord_individual_obj[indivial_i,:] = [ 7. 4. 52. 56.]
536 cord_individual_obj[indivial_i,:] = [ 8. 5. 88. 93.]
537 cord_individual_obj[indivial_i,:] = [ 9. 6. 8. 14.]
538 cord_individual_obj[indivial_i,:] = [10. 6. 44. 50.]
539 cord_individual_obj[indivial_i,:] = [11. 6. 44. 50.]
540 cord_individual_obj[indivial_i,:] = [12. 4. 68. 72.]
541 cord_individual_obj[indivial_i,:] = [13. 3. 8. 11.]
542 cord_individual_obj[indivial_i,:] = [14. 3. 32. 35.]
543 cord_individual_obj[indivial_i,:] = [15. 3. 32. 35.]
544 cord_individual_obj[indivial_i,:] = [16. 5. 12. 17.]
545 cord_individual_obj[indivial_i,:] = [17. 4. 46. 50.]
546 cord_individual_obj[indivial_i,:] = [18. 6. 8. 14.]
547 cord_individual_obj[indivial_i,:] = [19. 6. 84. 90.]
548 cord_individual_obj[indivial_i,:] = [20. 5. 18. 23.]
549 cord_individual_obj[indivial_i,:] = [21. 6. 64. 70.]
550 cord_individual_obj[indivial_i,:] = [22. 3. 32. 35.]
551 cord_individual_obj[indivial_i,:] = [23. 4. 36. 40.]
552 cord_individual_obj[indivial_i,:] = [24. 6. 8. 14.]
553
554 min(cord_individual_obj[:, 3]) = 11.0
555 histort_G_best_iter[iter, 3] = 11.0
556 Begin iteration:
557
558 iter = 17
559 cord_individual_obj[indivial_i,:] = [ 0. 3. 32. 35.]
560 cord_individual_obj[indivial_i,:] = [ 1. 3. 40. 43.]
561 cord_individual_obj[indivial_i,:] = [ 2. 4. 56. 60.]
562 cord_individual_obj[indivial_i,:] = [ 3. 4. 36. 40.]
563 cord_individual_obj[indivial_i,:] = [ 4. 3. 36. 39.]
564 cord_individual_obj[indivial_i,:] = [ 5. 4. 58. 62.]
565 cord_individual_obj[indivial_i,:] = [ 6. 3. 32. 35.]
566 cord_individual_obj[indivial_i,:] = [ 7. 5. 44. 49.]
567 cord_individual_obj[indivial_i,:] = [ 8. 3. 8. 11.]
568 cord_individual_obj[indivial_i,:] = [ 9. 5. 36. 41.]
569 cord_individual_obj[indivial_i,:] = [10. 3. 40. 43.]
570 cord_individual_obj[indivial_i,:] = [11. 3. 64. 67.]
571 cord_individual_obj[indivial_i,:] = [12. 4. 50. 54.]
572 cord_individual_obj[indivial_i,:] = [13. 5. 82. 87.]
573 cord_individual_obj[indivial_i,:] = [14. 3. 56. 59.]
574 cord_individual_obj[indivial_i,:] = [15. 3. 50. 53.]
575 cord_individual_obj[indivial_i,:] = [16. 5. 36. 41.]
576 cord_individual_obj[indivial_i,:] = [17. 5. 62. 67.]
577 cord_individual_obj[indivial_i,:] = [18. 4. 64. 68.]
578 cord_individual_obj[indivial_i,:] = [19. 3. 20. 23.]
579 cord_individual_obj[indivial_i,:] = [20. 4. 34. 38.]
580 cord_individual_obj[indivial_i,:] = [21. 3. 86. 89.]
581 cord_individual_obj[indivial_i,:] = [22. 5. 36. 41.]
582 cord_individual_obj[indivial_i,:] = [23. 3. 36. 39.]
583 cord_individual_obj[indivial_i,:] = [24. 3. 36. 39.]

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584
585 min(cord_individual_obj[:, 3]) = 11.0
586 historl_G_best_iter[iter, 3] = 11.0
587 Begin iteration:
588
589 iter = 18
590 cord_individual_obj[indivial_i, :] = [ 0.  5. 40. 45.]
591 cord_individual_obj[indivial_i, :] = [ 1.  4. 50. 54.]
592 cord_individual_obj[indivial_i, :] = [ 2.  5. 84. 89.]
593 cord_individual_obj[indivial_i, :] = [ 3.  4. 82. 86.]
594 cord_individual_obj[indivial_i, :] = [ 4.  4. 60. 64.]
595 cord_individual_obj[indivial_i, :] = [ 5.  3. 38. 41.]
596 cord_individual_obj[indivial_i, :] = [ 6.  3. 98. 101.]
597 cord_individual_obj[indivial_i, :] = [ 7.  3. 46. 49.]
598 cord_individual_obj[indivial_i, :] = [ 8.  5. 54. 59.]
599 cord_individual_obj[indivial_i, :] = [ 9.  6. 8. 14.]
600 cord_individual_obj[indivial_i, :] = [10.  6. 84. 90.]
601 cord_individual_obj[indivial_i, :] = [11.  5. 22. 27.]
602 cord_individual_obj[indivial_i, :] = [12.  4. 12. 16.]
603 cord_individual_obj[indivial_i, :] = [13.  5. 46. 51.]
604 cord_individual_obj[indivial_i, :] = [14.  3. 32. 35.]
605 cord_individual_obj[indivial_i, :] = [15.  3. 24. 27.]
606 cord_individual_obj[indivial_i, :] = [16.  4. 56. 60.]
607 cord_individual_obj[indivial_i, :] = [17.  3. 50. 53.]
608 cord_individual_obj[indivial_i, :] = [18.  6. 8. 14.]
609 cord_individual_obj[indivial_i, :] = [19.  4. 66. 70.]
610 cord_individual_obj[indivial_i, :] = [20.  6. 76. 82.]
611 cord_individual_obj[indivial_i, :] = [21.  3. 8. 11.]
612 cord_individual_obj[indivial_i, :] = [22.  5. 42. 47.]
613 cord_individual_obj[indivial_i, :] = [23.  4. 48. 52.]
614 cord_individual_obj[indivial_i, :] = [24.  6. 12. 18.]
615
616 min(cord_individual_obj[:, 3]) = 11.0
617 historl_G_best_iter[iter, 3] = 11.0
618 Begin iteration:
619
620 iter = 19
621 cord_individual_obj[indivial_i, :] = [ 0.  4. 20. 24.]
622 cord_individual_obj[indivial_i, :] = [ 1.  3. 64. 67.]
623 cord_individual_obj[indivial_i, :] = [ 2.  5. 20. 25.]
624 cord_individual_obj[indivial_i, :] = [ 3.  4. 32. 36.]
625 cord_individual_obj[indivial_i, :] = [ 4.  3. 20. 23.]
626 cord_individual_obj[indivial_i, :] = [ 5.  4. 30. 34.]
627 cord_individual_obj[indivial_i, :] = [ 6.  3. 8. 11.]
628 cord_individual_obj[indivial_i, :] = [ 7.  5. 32. 37.]
629 cord_individual_obj[indivial_i, :] = [ 8.  4. 36. 40.]
630 cord_individual_obj[indivial_i, :] = [ 9.  5. 18. 23.]
631 cord_individual_obj[indivial_i, :] = [10.  4. 30. 34.]
632 cord_individual_obj[indivial_i, :] = [11.  5. 30. 35.]
633 cord_individual_obj[indivial_i, :] = [12.  4. 36. 40.]
634 cord_individual_obj[indivial_i, :] = [13.  5. 64. 69.]
635 cord_individual_obj[indivial_i, :] = [14.  3. 56. 59.]
636 cord_individual_obj[indivial_i, :] = [15.  3. 36. 39.]
637 cord_individual_obj[indivial_i, :] = [16.  3. 20. 23.]
638 cord_individual_obj[indivial_i, :] = [17.  4. 36. 40.]
639 cord_individual_obj[indivial_i, :] = [18.  4. 18. 22.]
640 cord_individual_obj[indivial_i, :] = [19.  4. 12. 16.]
641 cord_individual_obj[indivial_i, :] = [20.  4. 38. 42.]
642 cord_individual_obj[indivial_i, :] = [21.  4. 30. 34.]
643 cord_individual_obj[indivial_i, :] = [22.  5. 64. 69.]
644 cord_individual_obj[indivial_i, :] = [23.  3. 38. 41.]
645 cord_individual_obj[indivial_i, :] = [24.  4. 18. 22.]
646
647 min(cord_individual_obj[:, 3]) = 11.0
648 historl_G_best_iter[iter, 3] = 11.0
649 Begin iteration:
650
651 iter = 20
652 cord_individual_obj[indivial_i, :] = [ 0.  5. 36. 41.]
653 cord_individual_obj[indivial_i, :] = [ 1.  4. 44. 48.]
654 cord_individual_obj[indivial_i, :] = [ 2.  5. 52. 57.]
655 cord_individual_obj[indivial_i, :] = [ 3.  4. 58. 62.]
656 cord_individual_obj[indivial_i, :] = [ 4.  4. 18. 22.]
657 cord_individual_obj[indivial_i, :] = [ 5.  4. 36. 40.]
658 cord_individual_obj[indivial_i, :] = [ 6.  4. 12. 16.]
659 cord_individual_obj[indivial_i, :] = [ 7.  5. 56. 61.]
660 cord_individual_obj[indivial_i, :] = [ 8.  5. 58. 63.]
661 cord_individual_obj[indivial_i, :] = [ 9.  5. 24. 29.]
662 cord_individual_obj[indivial_i, :] = [10.  4. 86. 90.]
663 cord_individual_obj[indivial_i, :] = [11.  4. 34. 38.]
664 cord_individual_obj[indivial_i, :] = [12.  4. 80. 84.]
665 cord_individual_obj[indivial_i, :] = [13.  3. 8. 11.]
666 cord_individual_obj[indivial_i, :] = [14.  3. 36. 39.]
667 cord_individual_obj[indivial_i, :] = [15.  3. 68. 71.]

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668 cord_individual_obj[indivial_i,:] = [16. 4. 58. 62.]
669 cord_individual_obj[indivial_i,:] = [17. 5. 50. 55.]
670 cord_individual_obj[indivial_i,:] = [18. 4. 34. 38.]
671 cord_individual_obj[indivial_i,:] = [19. 4. 12. 16.]
672 cord_individual_obj[indivial_i,:] = [20. 5. 24. 29.]
673 cord_individual_obj[indivial_i,:] = [21. 4. 12. 16.]
674 cord_individual_obj[indivial_i,:] = [22. 3. 64. 67.]
675 cord_individual_obj[indivial_i,:] = [23. 4. 36. 40.]
676 cord_individual_obj[indivial_i,:] = [24. 4. 18. 22.]
677
678 min(cord_individual_obj[:,3]) = 11.0
679 historl_G_best_iter[iter,3] = 11.0
680 Begin iteration:
681
682 iter = 21
683 cord_individual_obj[indivial_i,:] = [ 0. 5. 20. 25.]
684 cord_individual_obj[indivial_i,:] = [ 1. 3. 20. 23.]
685 cord_individual_obj[indivial_i,:] = [ 2. 5. 40. 45.]
686 cord_individual_obj[indivial_i,:] = [ 3. 4. 58. 62.]
687 cord_individual_obj[indivial_i,:] = [ 4. 3. 36. 39.]
688 cord_individual_obj[indivial_i,:] = [ 5. 4. 52. 56.]
689 cord_individual_obj[indivial_i,:] = [ 6. 4. 18. 22.]
690 cord_individual_obj[indivial_i,:] = [ 7. 5. 44. 49.]
691 cord_individual_obj[indivial_i,:] = [ 8. 5. 82. 87.]
692 cord_individual_obj[indivial_i,:] = [ 9. 6. 8. 14.]
693 cord_individual_obj[indivial_i,:] = [10. 3. 8. 11.]
694 cord_individual_obj[indivial_i,:] = [11. 5. 30. 35.]
695 cord_individual_obj[indivial_i,:] = [12. 4. 36. 40.]
696 cord_individual_obj[indivial_i,:] = [13. 4. 82. 86.]
697 cord_individual_obj[indivial_i,:] = [14. 3. 44. 47.]
698 cord_individual_obj[indivial_i,:] = [15. 3. 44. 47.]
699 cord_individual_obj[indivial_i,:] = [16. 5. 20. 25.]
700 cord_individual_obj[indivial_i,:] = [17. 4. 40. 44.]
701 cord_individual_obj[indivial_i,:] = [18. 4. 24. 28.]
702 cord_individual_obj[indivial_i,:] = [19. 4. 12. 16.]
703 cord_individual_obj[indivial_i,:] = [20. 6. 8. 14.]
704 cord_individual_obj[indivial_i,:] = [21. 4. 30. 34.]
705 cord_individual_obj[indivial_i,:] = [22. 5. 44. 49.]
706 cord_individual_obj[indivial_i,:] = [23. 3. 36. 39.]
707 cord_individual_obj[indivial_i,:] = [24. 6. 8. 14.]
708
709 min(cord_individual_obj[:,3]) = 11.0
710 historl_G_best_iter[iter,3] = 11.0
711 Begin iteration:
712
713 iter = 22
714 cord_individual_obj[indivial_i,:] = [ 0. 4. 66. 70.]
715 cord_individual_obj[indivial_i,:] = [ 1. 4. 74. 78.]
716 cord_individual_obj[indivial_i,:] = [ 2. 3. 38. 41.]
717 cord_individual_obj[indivial_i,:] = [ 3. 4. 24. 28.]
718 cord_individual_obj[indivial_i,:] = [ 4. 4. 54. 58.]
719 cord_individual_obj[indivial_i,:] = [ 5. 6. 16. 22.]
720 cord_individual_obj[indivial_i,:] = [ 6. 6. 8. 14.]
721 cord_individual_obj[indivial_i,:] = [ 7. 5. 34. 39.]
722 cord_individual_obj[indivial_i,:] = [ 8. 3. 8. 11.]
723 cord_individual_obj[indivial_i,:] = [ 9. 4. 24. 28.]
724 cord_individual_obj[indivial_i,:] = [10. 6. 12. 18.]
725 cord_individual_obj[indivial_i,:] = [11. 6. 8. 14.]
726 cord_individual_obj[indivial_i,:] = [12. 4. 18. 22.]
727 cord_individual_obj[indivial_i,:] = [13. 5. 54. 59.]
728 cord_individual_obj[indivial_i,:] = [14. 3. 20. 23.]
729 cord_individual_obj[indivial_i,:] = [15. 3. 8. 11.]
730 cord_individual_obj[indivial_i,:] = [16. 5. 16. 21.]
731 cord_individual_obj[indivial_i,:] = [17. 5. 40. 45.]
732 cord_individual_obj[indivial_i,:] = [18. 6. 8. 14.]
733 cord_individual_obj[indivial_i,:] = [19. 6. 24. 30.]
734 cord_individual_obj[indivial_i,:] = [20. 4. 24. 28.]
735 cord_individual_obj[indivial_i,:] = [21. 6. 14. 20.]
736 cord_individual_obj[indivial_i,:] = [22. 5. 56. 61.]
737 cord_individual_obj[indivial_i,:] = [23. 4. 8. 12.]
738 cord_individual_obj[indivial_i,:] = [24. 4. 52. 56.]
739
740 min(cord_individual_obj[:,3]) = 11.0
741 historl_G_best_iter[iter,3] = 11.0
742 Begin iteration:
743
744 iter = 23
745 cord_individual_obj[indivial_i,:] = [ 0. 5. 48. 53.]
746 cord_individual_obj[indivial_i,:] = [ 1. 3. 8. 11.]
747 cord_individual_obj[indivial_i,:] = [ 2. 5. 12. 17.]
748 cord_individual_obj[indivial_i,:] = [ 3. 4. 8. 12.]
749 cord_individual_obj[indivial_i,:] = [ 4. 4. 42. 46.]
750 cord_individual_obj[indivial_i,:] = [ 5. 6. 40. 46.]
751 cord_individual_obj[indivial_i,:] = [ 6. 6. 18. 24.]

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```

752 cord_individual_obj[indivial_i,:] = [ 7. 4. 52. 56.]
753 cord_individual_obj[indivial_i,:] = [ 8. 5. 54. 59.]
754 cord_individual_obj[indivial_i,:] = [ 9. 6. 8. 14.]
755 cord_individual_obj[indivial_i,:] = [10. 6. 8. 14.]
756 cord_individual_obj[indivial_i,:] = [11. 6. 8. 14.]
757 cord_individual_obj[indivial_i,:] = [12. 4. 58. 62.]
758 cord_individual_obj[indivial_i,:] = [13. 4. 24. 28.]
759 cord_individual_obj[indivial_i,:] = [14. 3. 32. 35.]
760 cord_individual_obj[indivial_i,:] = [15. 3. 32. 35.]
761 cord_individual_obj[indivial_i,:] = [16. 5. 12. 17.]
762 cord_individual_obj[indivial_i,:] = [17. 5. 48. 53.]
763 cord_individual_obj[indivial_i,:] = [18. 4. 36. 40.]
764 cord_individual_obj[indivial_i,:] = [19. 6. 60. 66.]
765 cord_individual_obj[indivial_i,:] = [20. 6. 8. 14.]
766 cord_individual_obj[indivial_i,:] = [21. 6. 50. 56.]
767 cord_individual_obj[indivial_i,:] = [22. 3. 64. 67.]
768 cord_individual_obj[indivial_i,:] = [23. 4. 36. 40.]
769 cord_individual_obj[indivial_i,:] = [24. 6. 8. 14.]
770
771 min(cord_individual_obj[:,3]) = 11.0
772 historl_G_best_iter[iter,3] = 11.0
773 Begin iteration:
774
775 iter = 24
776 cord_individual_obj[indivial_i,:] = [ 0. 4. 20. 24.]
777 cord_individual_obj[indivial_i,:] = [ 1. 4. 36. 40.]
778 cord_individual_obj[indivial_i,:] = [ 2. 3. 38. 41.]
779 cord_individual_obj[indivial_i,:] = [ 3. 4. 122. 126.]
780 cord_individual_obj[indivial_i,:] = [ 4. 4. 54. 58.]
781 cord_individual_obj[indivial_i,:] = [ 5. 6. 16. 22.]
782 cord_individual_obj[indivial_i,:] = [ 6. 3. 54. 57.]
783 cord_individual_obj[indivial_i,:] = [ 7. 3. 34. 37.]
784 cord_individual_obj[indivial_i,:] = [ 8. 5. 8. 13.]
785 cord_individual_obj[indivial_i,:] = [ 9. 4. 18. 22.]
786 cord_individual_obj[indivial_i,:] = [10. 4. 44. 48.]
787 cord_individual_obj[indivial_i,:] = [11. 5. 32. 37.]
788 cord_individual_obj[indivial_i,:] = [12. 4. 38. 42.]
789 cord_individual_obj[indivial_i,:] = [13. 3. 120. 123.]
790 cord_individual_obj[indivial_i,:] = [14. 3. 16. 19.]
791 cord_individual_obj[indivial_i,:] = [15. 3. 32. 35.]
792 cord_individual_obj[indivial_i,:] = [16. 5. 48. 53.]
793 cord_individual_obj[indivial_i,:] = [17. 3. 92. 95.]
794 cord_individual_obj[indivial_i,:] = [18. 6. 8. 14.]
795 cord_individual_obj[indivial_i,:] = [19. 4. 38. 42.]
796 cord_individual_obj[indivial_i,:] = [20. 6. 8. 14.]
797 cord_individual_obj[indivial_i,:] = [21. 4. 94. 98.]
798 cord_individual_obj[indivial_i,:] = [22. 3. 8. 11.]
799 cord_individual_obj[indivial_i,:] = [23. 4. 24. 28.]
800 cord_individual_obj[indivial_i,:] = [24. 4. 58. 62.]
801
802 min(cord_individual_obj[:,3]) = 11.0
803 historl_G_best_iter[iter,3] = 11.0
804 Begin iteration:
805
806 iter = 25
807 cord_individual_obj[indivial_i,:] = [ 0. 5. 20. 25.]
808 cord_individual_obj[indivial_i,:] = [ 1. 4. 36. 40.]
809 cord_individual_obj[indivial_i,:] = [ 2. 5. 44. 49.]
810 cord_individual_obj[indivial_i,:] = [ 3. 3. 8. 11.]
811 cord_individual_obj[indivial_i,:] = [ 4. 4. 18. 22.]
812 cord_individual_obj[indivial_i,:] = [ 5. 4. 30. 34.]
813 cord_individual_obj[indivial_i,:] = [ 6. 4. 12. 16.]
814 cord_individual_obj[indivial_i,:] = [ 7. 4. 44. 48.]
815 cord_individual_obj[indivial_i,:] = [ 8. 5. 54. 59.]
816 cord_individual_obj[indivial_i,:] = [ 9. 6. 8. 14.]
817 cord_individual_obj[indivial_i,:] = [10. 6. 12. 18.]
818 cord_individual_obj[indivial_i,:] = [11. 5. 24. 29.]
819 cord_individual_obj[indivial_i,:] = [12. 4. 68. 72.]
820 cord_individual_obj[indivial_i,:] = [13. 4. 58. 62.]
821 cord_individual_obj[indivial_i,:] = [14. 3. 32. 35.]
822 cord_individual_obj[indivial_i,:] = [15. 3. 56. 59.]
823 cord_individual_obj[indivial_i,:] = [16. 5. 32. 37.]
824 cord_individual_obj[indivial_i,:] = [17. 5. 44. 49.]
825 cord_individual_obj[indivial_i,:] = [18. 6. 8. 14.]
826 cord_individual_obj[indivial_i,:] = [19. 4. 12. 16.]
827 cord_individual_obj[indivial_i,:] = [20. 6. 8. 14.]
828 cord_individual_obj[indivial_i,:] = [21. 4. 30. 34.]
829 cord_individual_obj[indivial_i,:] = [22. 5. 76. 81.]
830 cord_individual_obj[indivial_i,:] = [23. 4. 36. 40.]
831 cord_individual_obj[indivial_i,:] = [24. 6. 8. 14.]
832
833 min(cord_individual_obj[:,3]) = 11.0
834 historl_G_best_iter[iter,3] = 11.0
835 Begin iteration:

```

```

836
837 iter = 26
838 cord_individual_obj[indivial_i, :] = [ 0. 5. 16. 21.]
839 cord_individual_obj[indivial_i, :] = [ 1. 4. 50. 54.]
840 cord_individual_obj[indivial_i, :] = [ 2. 5. 44. 49.]
841 cord_individual_obj[indivial_i, :] = [ 3. 4. 54. 58.]
842 cord_individual_obj[indivial_i, :] = [ 4. 4. 18. 22.]
843 cord_individual_obj[indivial_i, :] = [ 5. 6. 16. 22.]
844 cord_individual_obj[indivial_i, :] = [ 6. 6. 8. 14.]
845 cord_individual_obj[indivial_i, :] = [ 7. 5. 34. 39.]
846 cord_individual_obj[indivial_i, :] = [ 8. 5. 8. 13.]
847 cord_individual_obj[indivial_i, :] = [ 9. 5. 16. 21.]
848 cord_individual_obj[indivial_i, :] = [10. 4. 54. 58.]
849 cord_individual_obj[indivial_i, :] = [11. 6. 8. 14.]
850 cord_individual_obj[indivial_i, :] = [12. 4. 24. 28.]
851 cord_individual_obj[indivial_i, :] = [13. 5. 152. 157.]
852 cord_individual_obj[indivial_i, :] = [14. 3. 8. 11.]
853 cord_individual_obj[indivial_i, :] = [15. 3. 8. 11.]
854 cord_individual_obj[indivial_i, :] = [16. 5. 16. 21.]
855 cord_individual_obj[indivial_i, :] = [17. 3. 88. 91.]
856 cord_individual_obj[indivial_i, :] = [18. 6. 8. 14.]
857 cord_individual_obj[indivial_i, :] = [19. 6. 24. 30.]
858 cord_individual_obj[indivial_i, :] = [20. 5. 18. 23.]
859 cord_individual_obj[indivial_i, :] = [21. 6. 64. 70.]
860 cord_individual_obj[indivial_i, :] = [22. 3. 8. 11.]
861 cord_individual_obj[indivial_i, :] = [23. 4. 24. 28.]
862 cord_individual_obj[indivial_i, :] = [24. 4. 30. 34.]
863
864 min(cord_individual_obj[:, 3]) = 11.0
865 historl_G_best_iter[iter, 3] = 11.0
866 Begin iteration:
867
868 iter = 27
869 cord_individual_obj[indivial_i, :] = [ 0. 4. 94. 98.]
870 cord_individual_obj[indivial_i, :] = [ 1. 4. 20. 24.]
871 cord_individual_obj[indivial_i, :] = [ 2. 5. 18. 23.]
872 cord_individual_obj[indivial_i, :] = [ 3. 4. 100. 104.]
873 cord_individual_obj[indivial_i, :] = [ 4. 4. 36. 40.]
874 cord_individual_obj[indivial_i, :] = [ 5. 6. 12. 18.]
875 cord_individual_obj[indivial_i, :] = [ 6. 4. 8. 12.]
876 cord_individual_obj[indivial_i, :] = [ 7. 4. 66. 70.]
877 cord_individual_obj[indivial_i, :] = [ 8. 5. 72. 77.]
878 cord_individual_obj[indivial_i, :] = [ 9. 4. 34. 38.]
879 cord_individual_obj[indivial_i, :] = [10. 6. 24. 30.]
880 cord_individual_obj[indivial_i, :] = [11. 5. 12. 17.]
881 cord_individual_obj[indivial_i, :] = [12. 4. 88. 92.]
882 cord_individual_obj[indivial_i, :] = [13. 3. 8. 11.]
883 cord_individual_obj[indivial_i, :] = [14. 3. 8. 11.]
884 cord_individual_obj[indivial_i, :] = [15. 3. 32. 35.]
885 cord_individual_obj[indivial_i, :] = [16. 4. 8. 12.]
886 cord_individual_obj[indivial_i, :] = [17. 5. 60. 65.]
887 cord_individual_obj[indivial_i, :] = [18. 4. 18. 22.]
888 cord_individual_obj[indivial_i, :] = [19. 4. 86. 90.]
889 cord_individual_obj[indivial_i, :] = [20. 5. 26. 31.]
890 cord_individual_obj[indivial_i, :] = [21. 3. 128. 131.]
891 cord_individual_obj[indivial_i, :] = [22. 5. 44. 49.]
892 cord_individual_obj[indivial_i, :] = [23. 4. 40. 44.]
893 cord_individual_obj[indivial_i, :] = [24. 4. 18. 22.]
894
895 min(cord_individual_obj[:, 3]) = 11.0
896 historl_G_best_iter[iter, 3] = 11.0
897 Begin iteration:
898
899 iter = 28
900 cord_individual_obj[indivial_i, :] = [ 0. 5. 28. 33.]
901 cord_individual_obj[indivial_i, :] = [ 1. 4. 68. 72.]
902 cord_individual_obj[indivial_i, :] = [ 2. 5. 18. 23.]
903 cord_individual_obj[indivial_i, :] = [ 3. 4. 24. 28.]
904 cord_individual_obj[indivial_i, :] = [ 4. 4. 42. 46.]
905 cord_individual_obj[indivial_i, :] = [ 5. 6. 72. 78.]
906 cord_individual_obj[indivial_i, :] = [ 6. 6. 18. 24.]
907 cord_individual_obj[indivial_i, :] = [ 7. 5. 34. 39.]
908 cord_individual_obj[indivial_i, :] = [ 8. 5. 8. 13.]
909 cord_individual_obj[indivial_i, :] = [ 9. 6. 16. 22.]
910 cord_individual_obj[indivial_i, :] = [10. 4. 8. 12.]
911 cord_individual_obj[indivial_i, :] = [11. 6. 8. 14.]
912 cord_individual_obj[indivial_i, :] = [12. 4. 18. 22.]
913 cord_individual_obj[indivial_i, :] = [13. 5. 52. 57.]
914 cord_individual_obj[indivial_i, :] = [14. 3. 8. 11.]
915 cord_individual_obj[indivial_i, :] = [15. 3. 32. 35.]
916 cord_individual_obj[indivial_i, :] = [16. 5. 44. 49.]
917 cord_individual_obj[indivial_i, :] = [17. 5. 96. 101.]
918 cord_individual_obj[indivial_i, :] = [18. 4. 8. 12.]
919 cord_individual_obj[indivial_i, :] = [19. 4. 68. 72.]

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unknown

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920 cord_individual_obj[individual_i, :] = [20. 6. 8. 14.]
921 cord_individual_obj[individual_i, :] = [21. 3. 8. 11.]
922 cord_individual_obj[individual_i, :] = [22. 3. 26. 29.]
923 cord_individual_obj[individual_i, :] = [23. 4. 50. 54.]
924 cord_individual_obj[individual_i, :] = [24. 6. 8. 14.]
925
926 min(cord_individual_obj[:, 3]) = 11.0
927 historl_G_best_iter[iter, 3] = 11.0
928 Begin iteration:
929
930 iter = 29
931 cord_individual_obj[individual_i, :] = [ 0. 5. 32. 37.]
932 cord_individual_obj[individual_i, :] = [ 1. 3. 32. 35.]
933 cord_individual_obj[individual_i, :] = [ 2. 5. 32. 37.]
934 cord_individual_obj[individual_i, :] = [ 3. 4. 26. 30.]
935 cord_individual_obj[individual_i, :] = [ 4. 3. 32. 35.]
936 cord_individual_obj[individual_i, :] = [ 5. 5. 18. 23.]
937 cord_individual_obj[individual_i, :] = [ 6. 4. 38. 42.]
938 cord_individual_obj[individual_i, :] = [ 7. 5. 32. 37.]
939 cord_individual_obj[individual_i, :] = [ 8. 5. 54. 59.]
940 cord_individual_obj[individual_i, :] = [ 9. 5. 18. 23.]
941 cord_individual_obj[individual_i, :] = [10. 6. 18. 24.]
942 cord_individual_obj[individual_i, :] = [11. 5. 18. 23.]
943 cord_individual_obj[individual_i, :] = [12. 4. 32. 36.]
944 cord_individual_obj[individual_i, :] = [13. 5. 54. 59.]
945 cord_individual_obj[individual_i, :] = [14. 3. 32. 35.]
946 cord_individual_obj[individual_i, :] = [15. 3. 32. 35.]
947 cord_individual_obj[individual_i, :] = [16. 5. 32. 37.]
948 cord_individual_obj[individual_i, :] = [17. 3. 8. 11.]
949 cord_individual_obj[individual_i, :] = [18. 4. 18. 22.]
950 cord_individual_obj[individual_i, :] = [19. 4. 38. 42.]
951 cord_individual_obj[individual_i, :] = [20. 5. 26. 31.]
952 cord_individual_obj[individual_i, :] = [21. 4. 36. 40.]
953 cord_individual_obj[individual_i, :] = [22. 5. 74. 79.]
954 cord_individual_obj[individual_i, :] = [23. 4. 38. 42.]
955 cord_individual_obj[individual_i, :] = [24. 4. 26. 30.]
956
957 min(cord_individual_obj[:, 3]) = 11.0
958 historl_G_best_iter[iter, 3] = 11.0
959 Begin iteration:
960
961 iter = 30
962 cord_individual_obj[individual_i, :] = [ 0. 3. 44. 47.]
963 cord_individual_obj[individual_i, :] = [ 1. 4. 32. 36.]
964 cord_individual_obj[individual_i, :] = [ 2. 4. 38. 42.]
965 cord_individual_obj[individual_i, :] = [ 3. 3. 54. 57.]
966 cord_individual_obj[individual_i, :] = [ 4. 4. 42. 46.]
967 cord_individual_obj[individual_i, :] = [ 5. 5. 82. 87.]
968 cord_individual_obj[individual_i, :] = [ 6. 3. 74. 77.]
969 cord_individual_obj[individual_i, :] = [ 7. 5. 38. 43.]
970 cord_individual_obj[individual_i, :] = [ 8. 3. 32. 35.]
971 cord_individual_obj[individual_i, :] = [ 9. 5. 56. 61.]
972 cord_individual_obj[individual_i, :] = [10. 3. 32. 35.]
973 cord_individual_obj[individual_i, :] = [11. 3. 32. 35.]
974 cord_individual_obj[individual_i, :] = [12. 4. 82. 86.]
975 cord_individual_obj[individual_i, :] = [13. 5. 70. 75.]
976 cord_individual_obj[individual_i, :] = [14. 3. 32. 35.]
977 cord_individual_obj[individual_i, :] = [15. 3. 68. 71.]
978 cord_individual_obj[individual_i, :] = [16. 5. 84. 89.]
979 cord_individual_obj[individual_i, :] = [17. 5. 48. 53.]
980 cord_individual_obj[individual_i, :] = [18. 4. 18. 22.]
981 cord_individual_obj[individual_i, :] = [19. 4. 44. 48.]
982 cord_individual_obj[individual_i, :] = [20. 4. 18. 22.]
983 cord_individual_obj[individual_i, :] = [21. 3. 56. 59.]
984 cord_individual_obj[individual_i, :] = [22. 3. 8. 11.]
985 cord_individual_obj[individual_i, :] = [23. 3. 86. 89.]
986 cord_individual_obj[individual_i, :] = [24. 4. 30. 34.]
987
988 min(cord_individual_obj[:, 3]) = 11.0
989 historl_G_best_iter[iter, 3] = 11.0
990 Iteration calculate over
991
992
993
994
995 All item are in Bin and:
996 Bin area = 1080
997 Real_area = 87.0
998 Proportion_of_area = 0.0805555555555555556
999 BEST_CHROM =
1000 berth: [14.5 26. 20. 2.5 6.5 10. ]
1001 time: [0. 0. 0. 0. 0. 0. ]
1002 num_QC: [3. 2. 4. 4. 3. 3. ]
1003 Objective function values and some other indicators:

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unknown

1004	Obj0 = 3.00	Obj1 = 8.00	Obj0 + Obj1 = 11.00				
1005	Total movement of crane: 8.00						
1006	Total waiting time in berth position: 0.00						
1007	Total index of q during berthing: 582.00						
1008	Specific arrangement for each vessel:						
1009	V_id: 0 1.0 load_i: 80.0	li: 5.0 gama_i1 + 1: 2.0 work load gap_i: 0	xi: 14.5 gama_i1 - gama_i0: 1.0	bow of i: 12.0	tail of i: 17.0 duration_time_i: 2.0	gama_i0: 0.0 demand_i: 80.0	gama_i1: work
1010	V_id: 1 2.0 load_i: 120.0	li: 6.0 gama_i1 + 1: 3.0 work load gap_i: 0	xi: 26.0 gama_i1 - gama_i0: 2.0	bow of i: 23.0	tail of i: 29.0 duration_time_i: 3.0	gama_i0: 0.0 demand_i: 120.0	gama_i1: work
1011	V_id: 2 3.0 load_i: 260.0	li: 6.0 gama_i1 + 1: 4.0 work load gap_i: 0	xi: 20.0 gama_i1 - gama_i0: 3.0	bow of i: 17.0	tail of i: 23.0 duration_time_i: 4.0	gama_i0: 0.0 demand_i: 260.0	gama_i1: work
1012	V_id: 3 4.0 load_i: 80.0	li: 5.0 gama_i1 + 1: 1.0 work load gap_i: 0	xi: 2.5 gama_i1 - gama_i0: 0.0	bow of i: 0.0	tail of i: 5.0 duration_time_i: 1.0	gama_i0: 0.0 demand_i: 80.0	gama_i1: 0.0 work load_i
1013	V_id: 4 5.0 load_i: 200.0	li: 3.0 gama_i1 + 1: 4.0 work load gap_i: 0	xi: 6.5 gama_i1 - gama_i0: 3.0	bow of i: 5.0	tail of i: 8.0 duration_time_i: 4.0	gama_i0: 0.0 demand_i: 200.0	gama_i1: 3.0 work load_i
1014	V_id: 5 3.0 load_i: 220.0	li: 4.0 gama_i1 + 1: 4.0 work load gap_i: 0	xi: 10.0 gama_i1 - gama_i0: 3.0	bow of i: 8.0	tail of i: 12.0 duration_time_i: 4.0	gama_i0: 0.0 demand_i: 220.0	gama_i1: work
1015							
1016	Algorithm finished and the total CPU time: 283 s						
1017	End						
1018							