

unknown

```

80 historl_G_best_iter[iter, 3] = 12.0
81 Begin iteration:
82
83 iter = 2
84     cord_individual_obj[indivial_i, :] = [ 0.  5. 36. 41.]
85     cord_individual_obj[indivial_i, :] = [ 1.  4. 12. 16.]
86     cord_individual_obj[indivial_i, :] = [ 2.  5. 18. 23.]
87     cord_individual_obj[indivial_i, :] = [ 3.  5. 44. 49.]
88     cord_individual_obj[indivial_i, :] = [ 4.  6. 44. 50.]
89     cord_individual_obj[indivial_i, :] = [ 5.  3. 38. 41.]
90     cord_individual_obj[indivial_i, :] = [ 6.  4. 32. 36.]
91     cord_individual_obj[indivial_i, :] = [ 7.  5. 72. 77.]
92     cord_individual_obj[indivial_i, :] = [ 8.  3. 56. 59.]
93     cord_individual_obj[indivial_i, :] = [ 9.  4. 26. 30.]
94     cord_individual_obj[indivial_i, :] = [10. 5. 26. 31.]
95     cord_individual_obj[indivial_i, :] = [11. 4. 8. 12.]
96     cord_individual_obj[indivial_i, :] = [12. 6. 32. 38.]
97     cord_individual_obj[indivial_i, :] = [13. 4. 48. 52.]
98     cord_individual_obj[indivial_i, :] = [14. 5. 84. 89.]
99     cord_individual_obj[indivial_i, :] = [15. 4. 18. 22.]
100    cord_individual_obj[indivial_i, :] = [16. 5. 26. 31.]
101    cord_individual_obj[indivial_i, :] = [17. 6. 18. 24.]
102    cord_individual_obj[indivial_i, :] = [18. 4. 18. 22.]
103    cord_individual_obj[indivial_i, :] = [19. 6. 24. 30.]
104
105 min(cord_individual_obj[:, 3]) = 12.0
106 historl_G_best_iter[iter, 3] = 12.0
107 Begin iteration:
108
109 iter = 3
110    cord_individual_obj[indivial_i, :] = [ 0.  5. 40. 45.]
111    cord_individual_obj[indivial_i, :] = [ 1.  4. 12. 16.]
112    cord_individual_obj[indivial_i, :] = [ 2.  5.  8. 13.]
113    cord_individual_obj[indivial_i, :] = [ 3.  5. 44. 49.]
114    cord_individual_obj[indivial_i, :] = [ 4.  6. 54. 60.]
115    cord_individual_obj[indivial_i, :] = [ 5.  6.  8. 14.]
116    cord_individual_obj[indivial_i, :] = [ 6.  4. 66. 70.]
117    cord_individual_obj[indivial_i, :] = [ 7.  4. 60. 64.]
118    cord_individual_obj[indivial_i, :] = [ 8.  5. 34. 39.]
119    cord_individual_obj[indivial_i, :] = [ 9.  5. 70. 75.]
120    cord_individual_obj[indivial_i, :] = [10. 5. 34. 39.]
121    cord_individual_obj[indivial_i, :] = [11. 3. 44. 47.]
122    cord_individual_obj[indivial_i, :] = [12. 6. 18. 24.]
123    cord_individual_obj[indivial_i, :] = [13. 4. 32. 36.]
124    cord_individual_obj[indivial_i, :] = [14. 4. 8. 12.]
125    cord_individual_obj[indivial_i, :] = [15. 5. 26. 31.]
126    cord_individual_obj[indivial_i, :] = [16. 4. 18. 22.]
127    cord_individual_obj[indivial_i, :] = [17. 6. 46. 52.]
128    cord_individual_obj[indivial_i, :] = [18. 4. 18. 22.]
129    cord_individual_obj[indivial_i, :] = [19. 6. 24. 30.]
130
131 min(cord_individual_obj[:, 3]) = 12.0
132 historl_G_best_iter[iter, 3] = 12.0
133 Begin iteration:
134
135 iter = 4
136    cord_individual_obj[indivial_i, :] = [ 0.  5. 20. 25.]
137    cord_individual_obj[indivial_i, :] = [ 1.  4.  8. 12.]
138    cord_individual_obj[indivial_i, :] = [ 2.  4. 26. 30.]
139    cord_individual_obj[indivial_i, :] = [ 3.  5. 24. 29.]
140    cord_individual_obj[indivial_i, :] = [ 4.  4. 26. 30.]
141    cord_individual_obj[indivial_i, :] = [ 5.  6.  8. 14.]
142    cord_individual_obj[indivial_i, :] = [ 6.  6. 12. 18.]
143    cord_individual_obj[indivial_i, :] = [ 7.  5. 26. 31.]
144    cord_individual_obj[indivial_i, :] = [ 8.  6.  8. 14.]
145    cord_individual_obj[indivial_i, :] = [ 9.  4.  8. 12.]
146    cord_individual_obj[indivial_i, :] = [10. 4. 34. 38.]
147    cord_individual_obj[indivial_i, :] = [11. 4. 24. 28.]
148    cord_individual_obj[indivial_i, :] = [12. 4. 66. 70.]
149    cord_individual_obj[indivial_i, :] = [13. 4. 72. 76.]
150    cord_individual_obj[indivial_i, :] = [14. 5. 32. 37.]
151    cord_individual_obj[indivial_i, :] = [15. 5. 38. 43.]
152    cord_individual_obj[indivial_i, :] = [16. 4. 8. 12.]
153    cord_individual_obj[indivial_i, :] = [17. 4. 18. 22.]
154    cord_individual_obj[indivial_i, :] = [18. 4. 32. 36.]
155    cord_individual_obj[indivial_i, :] = [19. 5. 32. 37.]
156
157 min(cord_individual_obj[:, 3]) = 12.0
158 historl_G_best_iter[iter, 3] = 12.0
159 Begin iteration:
160
161 iter = 5
162    cord_individual_obj[indivial_i, :] = [ 0.  6.  8. 14.]
163    cord_individual_obj[indivial_i, :] = [ 1.  4. 54. 58.]

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164 cord_individual_obj[indivial_i,:] = [ 2. 5. 32. 37.]
165 cord_individual_obj[indivial_i,:] = [ 3. 5. 110. 115.]
166 cord_individual_obj[indivial_i,:] = [ 4. 3. 44. 47.]
167 cord_individual_obj[indivial_i,:] = [ 5. 4. 30. 34.]
168 cord_individual_obj[indivial_i,:] = [ 6. 4. 18. 22.]
169 cord_individual_obj[indivial_i,:] = [ 7. 4. 154. 158.]
170 cord_individual_obj[indivial_i,:] = [ 8. 5. 34. 39.]
171 cord_individual_obj[indivial_i,:] = [ 9. 6. 24. 30.]
172 cord_individual_obj[indivial_i,:] = [ 10. 5. 118. 123.]
173 cord_individual_obj[indivial_i,:] = [ 11. 3. 92. 95.]
174 cord_individual_obj[indivial_i,:] = [ 12. 4. 32. 36.]
175 cord_individual_obj[indivial_i,:] = [ 13. 4. 8. 12.]
176 cord_individual_obj[indivial_i,:] = [ 14. 4. 68. 72.]
177 cord_individual_obj[indivial_i,:] = [ 15. 5. 56. 61.]
178 cord_individual_obj[indivial_i,:] = [ 16. 4. 24. 28.]
179 cord_individual_obj[indivial_i,:] = [ 17. 4. 32. 36.]
180 cord_individual_obj[indivial_i,:] = [ 18. 4. 62. 66.]
181 cord_individual_obj[indivial_i,:] = [ 19. 5. 64. 69.]
182
183 min(cord_individual_obj[:,3]) = 12.0
184 historl_G_best_iter[iter, 3] = 12.0
185 Begin iteration:
186
187 iter = 6
188 cord_individual_obj[indivial_i,:] = [ 0. 4. 32. 36.]
189 cord_individual_obj[indivial_i,:] = [ 1. 4. 14. 18.]
190 cord_individual_obj[indivial_i,:] = [ 2. 5. 62. 67.]
191 cord_individual_obj[indivial_i,:] = [ 3. 5. 38. 43.]
192 cord_individual_obj[indivial_i,:] = [ 4. 5. 66. 71.]
193 cord_individual_obj[indivial_i,:] = [ 5. 4. 30. 34.]
194 cord_individual_obj[indivial_i,:] = [ 6. 6. 12. 18.]
195 cord_individual_obj[indivial_i,:] = [ 7. 4. 8. 12.]
196 cord_individual_obj[indivial_i,:] = [ 8. 5. 16. 21.]
197 cord_individual_obj[indivial_i,:] = [ 9. 5. 24. 29.]
198 cord_individual_obj[indivial_i,:] = [ 10. 4. 86. 90.]
199 cord_individual_obj[indivial_i,:] = [ 11. 4. 8. 12.]
200 cord_individual_obj[indivial_i,:] = [ 12. 4. 38. 42.]
201 cord_individual_obj[indivial_i,:] = [ 13. 4. 54. 58.]
202 cord_individual_obj[indivial_i,:] = [ 14. 5. 54. 59.]
203 cord_individual_obj[indivial_i,:] = [ 15. 5. 62. 67.]
204 cord_individual_obj[indivial_i,:] = [ 16. 6. 8. 14.]
205 cord_individual_obj[indivial_i,:] = [ 17. 4. 8. 12.]
206 cord_individual_obj[indivial_i,:] = [ 18. 4. 62. 66.]
207 cord_individual_obj[indivial_i,:] = [ 19. 4. 52. 56.]
208
209 min(cord_individual_obj[:,3]) = 12.0
210 historl_G_best_iter[iter, 3] = 12.0
211 Begin iteration:
212
213 iter = 7
214 cord_individual_obj[indivial_i,:] = [ 0. 4. 88. 92.]
215 cord_individual_obj[indivial_i,:] = [ 1. 4. 38. 42.]
216 cord_individual_obj[indivial_i,:] = [ 2. 5. 20. 25.]
217 cord_individual_obj[indivial_i,:] = [ 3. 5. 48. 53.]
218 cord_individual_obj[indivial_i,:] = [ 4. 6. 34. 40.]
219 cord_individual_obj[indivial_i,:] = [ 5. 6. 60. 66.]
220 cord_individual_obj[indivial_i,:] = [ 6. 4. 98. 102.]
221 cord_individual_obj[indivial_i,:] = [ 7. 5. 102. 107.]
222 cord_individual_obj[indivial_i,:] = [ 8. 6. 8. 14.]
223 cord_individual_obj[indivial_i,:] = [ 9. 4. 32. 36.]
224 cord_individual_obj[indivial_i,:] = [ 10. 4. 8. 12.]
225 cord_individual_obj[indivial_i,:] = [ 11. 6. 60. 66.]
226 cord_individual_obj[indivial_i,:] = [ 12. 6. 18. 24.]
227 cord_individual_obj[indivial_i,:] = [ 13. 4. 86. 90.]
228 cord_individual_obj[indivial_i,:] = [ 14. 5. 96. 101.]
229 cord_individual_obj[indivial_i,:] = [ 15. 5. 36. 41.]
230 cord_individual_obj[indivial_i,:] = [ 16. 4. 18. 22.]
231 cord_individual_obj[indivial_i,:] = [ 17. 6. 12. 18.]
232 cord_individual_obj[indivial_i,:] = [ 18. 4. 90. 94.]
233 cord_individual_obj[indivial_i,:] = [ 19. 6. 28. 34.]
234
235 min(cord_individual_obj[:,3]) = 12.0
236 historl_G_best_iter[iter, 3] = 12.0
237 Begin iteration:
238
239 iter = 8
240 cord_individual_obj[indivial_i,:] = [ 0. 4. 12. 16.]
241 cord_individual_obj[indivial_i,:] = [ 1. 4. 40. 44.]
242 cord_individual_obj[indivial_i,:] = [ 2. 5. 36. 41.]
243 cord_individual_obj[indivial_i,:] = [ 3. 5. 68. 73.]
244 cord_individual_obj[indivial_i,:] = [ 4. 4. 36. 40.]
245 cord_individual_obj[indivial_i,:] = [ 5. 6. 12. 18.]
246 cord_individual_obj[indivial_i,:] = [ 6. 6. 8. 14.]
247 cord_individual_obj[indivial_i,:] = [ 7. 4. 8. 12.]

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248 cord_individual_obj[indivial_i,:] = [ 8. 6. 44. 50.]
249 cord_individual_obj[indivial_i,:] = [ 9. 6. 8. 14.]
250 cord_individual_obj[indivial_i,:] = [10. 5. 20. 25.]
251 cord_individual_obj[indivial_i,:] = [11. 3. 132. 135.]
252 cord_individual_obj[indivial_i,:] = [12. 4. 30. 34.]
253 cord_individual_obj[indivial_i,:] = [13. 4. 40. 44.]
254 cord_individual_obj[indivial_i,:] = [14. 3. 44. 47.]
255 cord_individual_obj[indivial_i,:] = [15. 5. 56. 61.]
256 cord_individual_obj[indivial_i,:] = [16. 6. 12. 18.]
257 cord_individual_obj[indivial_i,:] = [17. 4. 70. 74.]
258 cord_individual_obj[indivial_i,:] = [18. 4. 56. 60.]
259 cord_individual_obj[indivial_i,:] = [19. 4. 64. 68.]
260
261 min(cord_individual_obj[:,3]) = 12.0
262 historl_G_best_iter[iter,3] = 12.0
263 Begin iteration:
264
265 iter = 9
266 cord_individual_obj[indivial_i,:] = [ 0. 4. 30. 34.]
267 cord_individual_obj[indivial_i,:] = [ 1. 4. 68. 72.]
268 cord_individual_obj[indivial_i,:] = [ 2. 5. 20. 25.]
269 cord_individual_obj[indivial_i,:] = [ 3. 5. 62. 67.]
270 cord_individual_obj[indivial_i,:] = [ 4. 4. 30. 34.]
271 cord_individual_obj[indivial_i,:] = [ 5. 4. 30. 34.]
272 cord_individual_obj[indivial_i,:] = [ 6. 6. 12. 18.]
273 cord_individual_obj[indivial_i,:] = [ 7. 5. 114. 119.]
274 cord_individual_obj[indivial_i,:] = [ 8. 6. 44. 50.]
275 cord_individual_obj[indivial_i,:] = [ 9. 6. 8. 14.]
276 cord_individual_obj[indivial_i,:] = [10. 5. 20. 25.]
277 cord_individual_obj[indivial_i,:] = [11. 4. 8. 12.]
278 cord_individual_obj[indivial_i,:] = [12. 4. 30. 34.]
279 cord_individual_obj[indivial_i,:] = [13. 4. 86. 90.]
280 cord_individual_obj[indivial_i,:] = [14. 5. 68. 73.]
281 cord_individual_obj[indivial_i,:] = [15. 5. 72. 77.]
282 cord_individual_obj[indivial_i,:] = [16. 5. 12. 17.]
283 cord_individual_obj[indivial_i,:] = [17. 4. 26. 30.]
284 cord_individual_obj[indivial_i,:] = [18. 4. 76. 80.]
285 cord_individual_obj[indivial_i,:] = [19. 4. 38. 42.]
286
287 min(cord_individual_obj[:,3]) = 12.0
288 historl_G_best_iter[iter,3] = 12.0
289 Begin iteration:
290
291 iter = 10
292 cord_individual_obj[indivial_i,:] = [ 0. 4. 20. 24.]
293 cord_individual_obj[indivial_i,:] = [ 1. 4. 30. 34.]
294 cord_individual_obj[indivial_i,:] = [ 2. 4. 40. 44.]
295 cord_individual_obj[indivial_i,:] = [ 3. 5. 38. 43.]
296 cord_individual_obj[indivial_i,:] = [ 4. 4. 48. 52.]
297 cord_individual_obj[indivial_i,:] = [ 5. 4. 12. 16.]
298 cord_individual_obj[indivial_i,:] = [ 6. 4. 44. 48.]
299 cord_individual_obj[indivial_i,:] = [ 7. 4. 8. 12.]
300 cord_individual_obj[indivial_i,:] = [ 8. 5. 24. 29.]
301 cord_individual_obj[indivial_i,:] = [ 9. 5. 48. 53.]
302 cord_individual_obj[indivial_i,:] = [10. 4. 38. 42.]
303 cord_individual_obj[indivial_i,:] = [11. 3. 90. 93.]
304 cord_individual_obj[indivial_i,:] = [12. 4. 40. 44.]
305 cord_individual_obj[indivial_i,:] = [13. 4. 44. 48.]
306 cord_individual_obj[indivial_i,:] = [14. 4. 30. 34.]
307 cord_individual_obj[indivial_i,:] = [15. 5. 40. 45.]
308 cord_individual_obj[indivial_i,:] = [16. 5. 44. 49.]
309 cord_individual_obj[indivial_i,:] = [17. 4. 44. 48.]
310 cord_individual_obj[indivial_i,:] = [18. 4. 58. 62.]
311 cord_individual_obj[indivial_i,:] = [19. 4. 38. 42.]
312
313 min(cord_individual_obj[:,3]) = 12.0
314 historl_G_best_iter[iter,3] = 12.0
315 Begin iteration:
316
317 iter = 11
318 cord_individual_obj[indivial_i,:] = [ 0. 6. 28. 34.]
319 cord_individual_obj[indivial_i,:] = [ 1. 4. 14. 18.]
320 cord_individual_obj[indivial_i,:] = [ 2. 5. 40. 45.]
321 cord_individual_obj[indivial_i,:] = [ 3. 5. 76. 81.]
322 cord_individual_obj[indivial_i,:] = [ 4. 4. 74. 78.]
323 cord_individual_obj[indivial_i,:] = [ 5. 3. 78. 81.]
324 cord_individual_obj[indivial_i,:] = [ 6. 6. 54. 60.]
325 cord_individual_obj[indivial_i,:] = [ 7. 5. 94. 99.]
326 cord_individual_obj[indivial_i,:] = [ 8. 6. 16. 22.]
327 cord_individual_obj[indivial_i,:] = [ 9. 6. 24. 30.]
328 cord_individual_obj[indivial_i,:] = [10. 5. 12. 17.]
329 cord_individual_obj[indivial_i,:] = [11. 4. 8. 12.]
330 cord_individual_obj[indivial_i,:] = [12. 4. 30. 34.]
331 cord_individual_obj[indivial_i,:] = [13. 4. 24. 28.]

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332 cord_individual_obj[indivial_i, :] = [14. 3. 8. 11.]
333 cord_individual_obj[indivial_i, :] = [15. 4. 54. 58.]
334 cord_individual_obj[indivial_i, :] = [16. 6. 60. 66.]
335 cord_individual_obj[indivial_i, :] = [17. 4. 34. 38.]
336 cord_individual_obj[indivial_i, :] = [18. 4. 78. 82.]
337 cord_individual_obj[indivial_i, :] = [19. 4. 26. 30.]
338
339 min(cord_individual_obj[:, 3]) = 11.0
340 historl_G_best_iter[iter, 3] = 11.0
341 Begin iteration:
342
343 iter = 12
344 cord_individual_obj[indivial_i, :] = [ 0. 5. 28. 33.]
345 cord_individual_obj[indivial_i, :] = [ 1. 4. 8. 12.]
346 cord_individual_obj[indivial_i, :] = [ 2. 4. 12. 16.]
347 cord_individual_obj[indivial_i, :] = [ 3. 5. 24. 29.]
348 cord_individual_obj[indivial_i, :] = [ 4. 4. 24. 28.]
349 cord_individual_obj[indivial_i, :] = [ 5. 6. 24. 30.]
350 cord_individual_obj[indivial_i, :] = [ 6. 4. 12. 16.]
351 cord_individual_obj[indivial_i, :] = [ 7. 3. 8. 11.]
352 cord_individual_obj[indivial_i, :] = [ 8. 4. 48. 52.]
353 cord_individual_obj[indivial_i, :] = [ 9. 5. 78. 83.]
354 cord_individual_obj[indivial_i, :] = [10. 4. 52. 56.]
355 cord_individual_obj[indivial_i, :] = [11. 4. 8. 12.]
356 cord_individual_obj[indivial_i, :] = [12. 3. 40. 43.]
357 cord_individual_obj[indivial_i, :] = [13. 4. 30. 34.]
358 cord_individual_obj[indivial_i, :] = [14. 5. 24. 29.]
359 cord_individual_obj[indivial_i, :] = [15. 5. 58. 63.]
360 cord_individual_obj[indivial_i, :] = [16. 5. 8. 13.]
361 cord_individual_obj[indivial_i, :] = [17. 4. 40. 44.]
362 cord_individual_obj[indivial_i, :] = [18. 4. 34. 38.]
363 cord_individual_obj[indivial_i, :] = [19. 5. 62. 67.]
364
365 min(cord_individual_obj[:, 3]) = 11.0
366 historl_G_best_iter[iter, 3] = 11.0
367 Begin iteration:
368
369 iter = 13
370 cord_individual_obj[indivial_i, :] = [ 0. 6. 12. 18.]
371 cord_individual_obj[indivial_i, :] = [ 1. 4. 12. 16.]
372 cord_individual_obj[indivial_i, :] = [ 2. 5. 22. 27.]
373 cord_individual_obj[indivial_i, :] = [ 3. 5. 8. 13.]
374 cord_individual_obj[indivial_i, :] = [ 4. 4. 100. 104.]
375 cord_individual_obj[indivial_i, :] = [ 5. 3. 30. 33.]
376 cord_individual_obj[indivial_i, :] = [ 6. 4. 12. 16.]
377 cord_individual_obj[indivial_i, :] = [ 7. 4. 78. 82.]
378 cord_individual_obj[indivial_i, :] = [ 8. 5. 44. 49.]
379 cord_individual_obj[indivial_i, :] = [ 9. 3. 8. 11.]
380 cord_individual_obj[indivial_i, :] = [10. 5. 24. 29.]
381 cord_individual_obj[indivial_i, :] = [11. 5. 24. 29.]
382 cord_individual_obj[indivial_i, :] = [12. 4. 30. 34.]
383 cord_individual_obj[indivial_i, :] = [13. 4. 24. 28.]
384 cord_individual_obj[indivial_i, :] = [14. 5. 54. 59.]
385 cord_individual_obj[indivial_i, :] = [15. 4. 16. 20.]
386 cord_individual_obj[indivial_i, :] = [16. 6. 16. 22.]
387 cord_individual_obj[indivial_i, :] = [17. 4. 48. 52.]
388 cord_individual_obj[indivial_i, :] = [18. 4. 58. 62.]
389 cord_individual_obj[indivial_i, :] = [19. 4. 62. 66.]
390
391 min(cord_individual_obj[:, 3]) = 11.0
392 historl_G_best_iter[iter, 3] = 11.0
393 Begin iteration:
394
395 iter = 14
396 cord_individual_obj[indivial_i, :] = [ 0. 6. 12. 18.]
397 cord_individual_obj[indivial_i, :] = [ 1. 3. 20. 23.]
398 cord_individual_obj[indivial_i, :] = [ 2. 5. 12. 17.]
399 cord_individual_obj[indivial_i, :] = [ 3. 3. 100. 103.]
400 cord_individual_obj[indivial_i, :] = [ 4. 3. 8. 11.]
401 cord_individual_obj[indivial_i, :] = [ 5. 6. 12. 18.]
402 cord_individual_obj[indivial_i, :] = [ 6. 4. 12. 16.]
403 cord_individual_obj[indivial_i, :] = [ 7. 5. 74. 79.]
404 cord_individual_obj[indivial_i, :] = [ 8. 6. 44. 50.]
405 cord_individual_obj[indivial_i, :] = [ 9. 6. 62. 68.]
406 cord_individual_obj[indivial_i, :] = [10. 5. 62. 67.]
407 cord_individual_obj[indivial_i, :] = [11. 4. 12. 16.]
408 cord_individual_obj[indivial_i, :] = [12. 4. 50. 54.]
409 cord_individual_obj[indivial_i, :] = [13. 4. 30. 34.]
410 cord_individual_obj[indivial_i, :] = [14. 5. 24. 29.]
411 cord_individual_obj[indivial_i, :] = [15. 5. 96. 101.]
412 cord_individual_obj[indivial_i, :] = [16. 6. 8. 14.]
413 cord_individual_obj[indivial_i, :] = [17. 4. 24. 28.]
414 cord_individual_obj[indivial_i, :] = [18. 4. 84. 88.]
415 cord_individual_obj[indivial_i, :] = [19. 5. 68. 73.]

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416
417 min(cord_individual_obj[:, 3]) = 11.0
418 historl_G_best_iter[iter, 3] = 11.0
419 Begin iteration:
420
421 iter = 15
422 cord_individual_obj[indivial_i, :] = [ 0.  4. 36. 40.]
423 cord_individual_obj[indivial_i, :] = [ 1.  3. 8. 11.]
424 cord_individual_obj[indivial_i, :] = [ 2.  4. 8. 12.]
425 cord_individual_obj[indivial_i, :] = [ 3.  3. 8. 11.]
426 cord_individual_obj[indivial_i, :] = [ 4.  4. 62. 66.]
427 cord_individual_obj[indivial_i, :] = [ 5.  4. 8. 12.]
428 cord_individual_obj[indivial_i, :] = [ 6.  6. 48. 54.]
429 cord_individual_obj[indivial_i, :] = [ 7.  5. 40. 45.]
430 cord_individual_obj[indivial_i, :] = [ 8.  4. 18. 22.]
431 cord_individual_obj[indivial_i, :] = [ 9.  5. 8. 13.]
432 cord_individual_obj[indivial_i, :] = [10. 4. 20. 24.]
433 cord_individual_obj[indivial_i, :] = [11. 4. 8. 12.]
434 cord_individual_obj[indivial_i, :] = [12. 3. 68. 71.]
435 cord_individual_obj[indivial_i, :] = [13. 4. 44. 48.]
436 cord_individual_obj[indivial_i, :] = [14. 4. 24. 28.]
437 cord_individual_obj[indivial_i, :] = [15. 5. 20. 25.]
438 cord_individual_obj[indivial_i, :] = [16. 5. 12. 17.]
439 cord_individual_obj[indivial_i, :] = [17. 3. 66. 69.]
440 cord_individual_obj[indivial_i, :] = [18. 4. 40. 44.]
441 cord_individual_obj[indivial_i, :] = [19. 5. 24. 29.]
442
443 min(cord_individual_obj[:, 3]) = 11.0
444 historl_G_best_iter[iter, 3] = 11.0
445 Begin iteration:
446
447 iter = 16
448 cord_individual_obj[indivial_i, :] = [ 0.  6. 8. 14.]
449 cord_individual_obj[indivial_i, :] = [ 1.  3. 30. 33.]
450 cord_individual_obj[indivial_i, :] = [ 2.  5. 38. 43.]
451 cord_individual_obj[indivial_i, :] = [ 3.  3. 98. 101.]
452 cord_individual_obj[indivial_i, :] = [ 4.  4. 32. 36.]
453 cord_individual_obj[indivial_i, :] = [ 5.  6. 18. 24.]
454 cord_individual_obj[indivial_i, :] = [ 6.  6. 8. 14.]
455 cord_individual_obj[indivial_i, :] = [ 7.  4. 92. 96.]
456 cord_individual_obj[indivial_i, :] = [ 8.  6. 8. 14.]
457 cord_individual_obj[indivial_i, :] = [ 9.  6. 8. 14.]
458 cord_individual_obj[indivial_i, :] = [10. 5. 44. 49.]
459 cord_individual_obj[indivial_i, :] = [11. 4. 24. 28.]
460 cord_individual_obj[indivial_i, :] = [12. 3. 8. 11.]
461 cord_individual_obj[indivial_i, :] = [13. 4. 86. 90.]
462 cord_individual_obj[indivial_i, :] = [14. 5. 54. 59.]
463 cord_individual_obj[indivial_i, :] = [15. 5. 82. 87.]
464 cord_individual_obj[indivial_i, :] = [16. 6. 8. 14.]
465 cord_individual_obj[indivial_i, :] = [17. 4. 26. 30.]
466 cord_individual_obj[indivial_i, :] = [18. 4. 38. 42.]
467 cord_individual_obj[indivial_i, :] = [19. 4. 32. 36.]
468
469 min(cord_individual_obj[:, 3]) = 11.0
470 historl_G_best_iter[iter, 3] = 11.0
471 Begin iteration:
472
473 iter = 17
474 cord_individual_obj[indivial_i, :] = [ 0.  4. 18. 22.]
475 cord_individual_obj[indivial_i, :] = [ 1.  3. 20. 23.]
476 cord_individual_obj[indivial_i, :] = [ 2.  4. 8. 12.]
477 cord_individual_obj[indivial_i, :] = [ 3.  3. 8. 11.]
478 cord_individual_obj[indivial_i, :] = [ 4.  4. 12. 16.]
479 cord_individual_obj[indivial_i, :] = [ 5.  4. 8. 12.]
480 cord_individual_obj[indivial_i, :] = [ 6.  4. 26. 30.]
481 cord_individual_obj[indivial_i, :] = [ 7.  4. 52. 56.]
482 cord_individual_obj[indivial_i, :] = [ 8.  4. 26. 30.]
483 cord_individual_obj[indivial_i, :] = [ 9.  4. 18. 22.]
484 cord_individual_obj[indivial_i, :] = [10. 4. 70. 74.]
485 cord_individual_obj[indivial_i, :] = [11. 4. 12. 16.]
486 cord_individual_obj[indivial_i, :] = [12. 4. 68. 72.]
487 cord_individual_obj[indivial_i, :] = [13. 4. 98. 102.]
488 cord_individual_obj[indivial_i, :] = [14. 4. 44. 48.]
489 cord_individual_obj[indivial_i, :] = [15. 4. 78. 82.]
490 cord_individual_obj[indivial_i, :] = [16. 4. 8. 12.]
491 cord_individual_obj[indivial_i, :] = [17. 4. 36. 40.]
492 cord_individual_obj[indivial_i, :] = [18. 4. 26. 30.]
493 cord_individual_obj[indivial_i, :] = [19. 5. 64. 69.]
494
495 min(cord_individual_obj[:, 3]) = 11.0
496 historl_G_best_iter[iter, 3] = 11.0
497 Begin iteration:
498
499 iter = 18

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500 cord_individual_obj[indivial_i,:] = [ 0.  5. 26. 31.]
501 cord_individual_obj[indivial_i,:] = [ 1.  3. 24. 27.]
502 cord_individual_obj[indivial_i,:] = [ 2.  5. 44. 49.]
503 cord_individual_obj[indivial_i,:] = [ 3.  3. 116. 119.]
504 cord_individual_obj[indivial_i,:] = [ 4.  4. 8. 12.]
505 cord_individual_obj[indivial_i,:] = [ 5.  4. 18. 22.]
506 cord_individual_obj[indivial_i,:] = [ 6.  4. 24. 28.]
507 cord_individual_obj[indivial_i,:] = [ 7.  4. 122. 126.]
508 cord_individual_obj[indivial_i,:] = [ 8.  5. 18. 23.]
509 cord_individual_obj[indivial_i,:] = [ 9.  4. 26. 30.]
510 cord_individual_obj[indivial_i,:] = [10.  5. 44. 49.]
511 cord_individual_obj[indivial_i,:] = [11.  4. 44. 48.]
512 cord_individual_obj[indivial_i,:] = [12.  4. 88. 92.]
513 cord_individual_obj[indivial_i,:] = [13.  3. 8. 11.]
514 cord_individual_obj[indivial_i,:] = [14.  5. 18. 23.]
515 cord_individual_obj[indivial_i,:] = [15.  3. 104. 107.]
516 cord_individual_obj[indivial_i,:] = [16.  5. 12. 17.]
517 cord_individual_obj[indivial_i,:] = [17.  3. 32. 35.]
518 cord_individual_obj[indivial_i,:] = [18.  3. 20. 23.]
519 cord_individual_obj[indivial_i,:] = [19.  5. 26. 31.]
520
521 min(cord_individual_obj[:,3]) = 11.0
522 historl_G_best_iter[iter,3] = 11.0
523 Begin iteration:
524
525 iter = 19
526 cord_individual_obj[indivial_i,:] = [ 0.  6. 12. 18.]
527 cord_individual_obj[indivial_i,:] = [ 1.  3. 90. 93.]
528 cord_individual_obj[indivial_i,:] = [ 2.  5. 48. 53.]
529 cord_individual_obj[indivial_i,:] = [ 3.  5. 84. 89.]
530 cord_individual_obj[indivial_i,:] = [ 4.  4. 32. 36.]
531 cord_individual_obj[indivial_i,:] = [ 5.  3. 58. 61.]
532 cord_individual_obj[indivial_i,:] = [ 6.  4. 28. 32.]
533 cord_individual_obj[indivial_i,:] = [ 7.  3. 8. 11.]
534 cord_individual_obj[indivial_i,:] = [ 8.  5. 16. 21.]
535 cord_individual_obj[indivial_i,:] = [ 9.  5. 44. 49.]
536 cord_individual_obj[indivial_i,:] = [10.  4. 60. 64.]
537 cord_individual_obj[indivial_i,:] = [11.  4. 60. 64.]
538 cord_individual_obj[indivial_i,:] = [12.  4. 18. 22.]
539 cord_individual_obj[indivial_i,:] = [13.  4. 98. 102.]
540 cord_individual_obj[indivial_i,:] = [14.  5. 54. 59.]
541 cord_individual_obj[indivial_i,:] = [15.  4. 56. 60.]
542 cord_individual_obj[indivial_i,:] = [16.  6. 8. 14.]
543 cord_individual_obj[indivial_i,:] = [17.  4. 46. 50.]
544 cord_individual_obj[indivial_i,:] = [18.  4. 66. 70.]
545 cord_individual_obj[indivial_i,:] = [19.  4. 38. 42.]
546
547 min(cord_individual_obj[:,3]) = 11.0
548 historl_G_best_iter[iter,3] = 11.0
549 Begin iteration:
550
551 iter = 20
552 cord_individual_obj[indivial_i,:] = [ 0.  4. 18. 22.]
553 cord_individual_obj[indivial_i,:] = [ 1.  3. 20. 23.]
554 cord_individual_obj[indivial_i,:] = [ 2.  5. 8. 13.]
555 cord_individual_obj[indivial_i,:] = [ 3.  3. 62. 65.]
556 cord_individual_obj[indivial_i,:] = [ 4.  4. 24. 28.]
557 cord_individual_obj[indivial_i,:] = [ 5.  6. 8. 14.]
558 cord_individual_obj[indivial_i,:] = [ 6.  6. 8. 14.]
559 cord_individual_obj[indivial_i,:] = [ 7.  4. 120. 124.]
560 cord_individual_obj[indivial_i,:] = [ 8.  6. 8. 14.]
561 cord_individual_obj[indivial_i,:] = [ 9.  6. 8. 14.]
562 cord_individual_obj[indivial_i,:] = [10.  5. 32. 37.]
563 cord_individual_obj[indivial_i,:] = [11.  4. 70. 74.]
564 cord_individual_obj[indivial_i,:] = [12.  4. 44. 48.]
565 cord_individual_obj[indivial_i,:] = [13.  3. 8. 11.]
566 cord_individual_obj[indivial_i,:] = [14.  4. 32. 36.]
567 cord_individual_obj[indivial_i,:] = [15.  4. 70. 74.]
568 cord_individual_obj[indivial_i,:] = [16.  4. 18. 22.]
569 cord_individual_obj[indivial_i,:] = [17.  4. 26. 30.]
570 cord_individual_obj[indivial_i,:] = [18.  4. 26. 30.]
571 cord_individual_obj[indivial_i,:] = [19.  4. 26. 30.]
572
573 min(cord_individual_obj[:,3]) = 11.0
574 historl_G_best_iter[iter,3] = 11.0
575 Begin iteration:
576
577 iter = 21
578 cord_individual_obj[indivial_i,:] = [ 0.  5. 8. 13.]
579 cord_individual_obj[indivial_i,:] = [ 1.  3. 60. 63.]
580 cord_individual_obj[indivial_i,:] = [ 2.  3. 52. 55.]
581 cord_individual_obj[indivial_i,:] = [ 3.  3. 60. 63.]
582 cord_individual_obj[indivial_i,:] = [ 4.  4. 44. 48.]
583 cord_individual_obj[indivial_i,:] = [ 5.  4. 36. 40.]

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584 cord_individual_obj[indivial_i,:] = [ 6. 4. 82. 86.]
585 cord_individual_obj[indivial_i,:] = [ 7. 3. 8. 11.]
586 cord_individual_obj[indivial_i,:] = [ 8. 5. 70. 75.]
587 cord_individual_obj[indivial_i,:] = [ 9. 5. 44. 49.]
588 cord_individual_obj[indivial_i,:] = [10. 3. 32. 35.]
589 cord_individual_obj[indivial_i,:] = [11. 4. 44. 48.]
590 cord_individual_obj[indivial_i,:] = [12. 4. 26. 30.]
591 cord_individual_obj[indivial_i,:] = [13. 4. 54. 58.]
592 cord_individual_obj[indivial_i,:] = [14. 5. 18. 23.]
593 cord_individual_obj[indivial_i,:] = [15. 5. 62. 67.]
594 cord_individual_obj[indivial_i,:] = [16. 5. 56. 61.]
595 cord_individual_obj[indivial_i,:] = [17. 3. 56. 59.]
596 cord_individual_obj[indivial_i,:] = [18. 3. 8. 11.]
597 cord_individual_obj[indivial_i,:] = [19. 5. 70. 75.]
598
599 min(cord_individual_obj[:,3]) = 11.0
600 historl_G_best_iter[iter,3] = 11.0
601 Begin iteration:
602
603 iter = 22
604 cord_individual_obj[indivial_i,:] = [ 0. 6. 24. 30.]
605 cord_individual_obj[indivial_i,:] = [ 1. 3. 112. 115.]
606 cord_individual_obj[indivial_i,:] = [ 2. 4. 56. 60.]
607 cord_individual_obj[indivial_i,:] = [ 3. 3. 24. 27.]
608 cord_individual_obj[indivial_i,:] = [ 4. 4. 112. 116.]
609 cord_individual_obj[indivial_i,:] = [ 5. 4. 48. 52.]
610 cord_individual_obj[indivial_i,:] = [ 6. 3. 8. 11.]
611 cord_individual_obj[indivial_i,:] = [ 7. 4. 70. 74.]
612 cord_individual_obj[indivial_i,:] = [ 8. 6. 20. 26.]
613 cord_individual_obj[indivial_i,:] = [ 9. 6. 26. 32.]
614 cord_individual_obj[indivial_i,:] = [10. 5. 44. 49.]
615 cord_individual_obj[indivial_i,:] = [11. 3. 144. 147.]
616 cord_individual_obj[indivial_i,:] = [12. 4. 32. 36.]
617 cord_individual_obj[indivial_i,:] = [13. 5. 112. 117.]
618 cord_individual_obj[indivial_i,:] = [14. 5. 8. 13.]
619 cord_individual_obj[indivial_i,:] = [15. 4. 12. 16.]
620 cord_individual_obj[indivial_i,:] = [16. 6. 14. 20.]
621 cord_individual_obj[indivial_i,:] = [17. 4. 26. 30.]
622 cord_individual_obj[indivial_i,:] = [18. 4. 66. 70.]
623 cord_individual_obj[indivial_i,:] = [19. 4. 64. 68.]
624
625 min(cord_individual_obj[:,3]) = 11.0
626 historl_G_best_iter[iter,3] = 11.0
627 Begin iteration:
628
629 iter = 23
630 cord_individual_obj[indivial_i,:] = [ 0. 4. 18. 22.]
631 cord_individual_obj[indivial_i,:] = [ 1. 3. 8. 11.]
632 cord_individual_obj[indivial_i,:] = [ 2. 5. 8. 13.]
633 cord_individual_obj[indivial_i,:] = [ 3. 5. 62. 67.]
634 cord_individual_obj[indivial_i,:] = [ 4. 4. 26. 30.]
635 cord_individual_obj[indivial_i,:] = [ 5. 6. 8. 14.]
636 cord_individual_obj[indivial_i,:] = [ 6. 6. 8. 14.]
637 cord_individual_obj[indivial_i,:] = [ 7. 5. 86. 91.]
638 cord_individual_obj[indivial_i,:] = [ 8. 6. 8. 14.]
639 cord_individual_obj[indivial_i,:] = [ 9. 6. 24. 30.]
640 cord_individual_obj[indivial_i,:] = [10. 5. 44. 49.]
641 cord_individual_obj[indivial_i,:] = [11. 3. 8. 11.]
642 cord_individual_obj[indivial_i,:] = [12. 4. 18. 22.]
643 cord_individual_obj[indivial_i,:] = [13. 4. 74. 78.]
644 cord_individual_obj[indivial_i,:] = [14. 5. 32. 37.]
645 cord_individual_obj[indivial_i,:] = [15. 4. 38. 42.]
646 cord_individual_obj[indivial_i,:] = [16. 5. 8. 13.]
647 cord_individual_obj[indivial_i,:] = [17. 4. 18. 22.]
648 cord_individual_obj[indivial_i,:] = [18. 4. 38. 42.]
649 cord_individual_obj[indivial_i,:] = [19. 5. 36. 41.]
650
651 min(cord_individual_obj[:,3]) = 11.0
652 historl_G_best_iter[iter,3] = 11.0
653 Begin iteration:
654
655 iter = 24
656 cord_individual_obj[indivial_i,:] = [ 0. 6. 24. 30.]
657 cord_individual_obj[indivial_i,:] = [ 1. 3. 110. 113.]
658 cord_individual_obj[indivial_i,:] = [ 2. 5. 20. 25.]
659 cord_individual_obj[indivial_i,:] = [ 3. 5. 76. 81.]
660 cord_individual_obj[indivial_i,:] = [ 4. 4. 30. 34.]
661 cord_individual_obj[indivial_i,:] = [ 5. 6. 12. 18.]
662 cord_individual_obj[indivial_i,:] = [ 6. 6. 12. 18.]
663 cord_individual_obj[indivial_i,:] = [ 7. 3. 8. 11.]
664 cord_individual_obj[indivial_i,:] = [ 8. 6. 44. 50.]
665 cord_individual_obj[indivial_i,:] = [ 9. 6. 8. 14.]
666 cord_individual_obj[indivial_i,:] = [10. 5. 72. 77.]
667 cord_individual_obj[indivial_i,:] = [11. 4. 56. 60.]

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668 cord_individual_obj[indivial_i,:] = [12. 4. 24. 28.]
669 cord_individual_obj[indivial_i,:] = [13. 4. 86. 90.]
670 cord_individual_obj[indivial_i,:] = [14. 4. 68. 72.]
671 cord_individual_obj[indivial_i,:] = [15. 4. 62. 66.]
672 cord_individual_obj[indivial_i,:] = [16. 5. 12. 17.]
673 cord_individual_obj[indivial_i,:] = [17. 4. 26. 30.]
674 cord_individual_obj[indivial_i,:] = [18. 4. 70. 74.]
675 cord_individual_obj[indivial_i,:] = [19. 5. 38. 43.]
676
677 min(cord_individual_obj[:,3]) = 11.0
678 historl_G_best_iter[iter,3] = 11.0
679 Begin iteration:
680
681 iter = 25
682 cord_individual_obj[indivial_i,:] = [ 0. 5. 12. 17.]
683 cord_individual_obj[indivial_i,:] = [ 1. 3. 8. 11.]
684 cord_individual_obj[indivial_i,:] = [ 2. 4. 40. 44.]
685 cord_individual_obj[indivial_i,:] = [ 3. 5. 58. 63.]
686 cord_individual_obj[indivial_i,:] = [ 4. 4. 44. 48.]
687 cord_individual_obj[indivial_i,:] = [ 5. 4. 44. 48.]
688 cord_individual_obj[indivial_i,:] = [ 6. 4. 36. 40.]
689 cord_individual_obj[indivial_i,:] = [ 7. 5. 98. 103.]
690 cord_individual_obj[indivial_i,:] = [ 8. 4. 28. 32.]
691 cord_individual_obj[indivial_i,:] = [ 9. 5. 58. 63.]
692 cord_individual_obj[indivial_i,:] = [10. 4. 36. 40.]
693 cord_individual_obj[indivial_i,:] = [11. 4. 52. 56.]
694 cord_individual_obj[indivial_i,:] = [12. 4. 62. 66.]
695 cord_individual_obj[indivial_i,:] = [13. 4. 44. 48.]
696 cord_individual_obj[indivial_i,:] = [14. 5. 48. 53.]
697 cord_individual_obj[indivial_i,:] = [15. 5. 40. 45.]
698 cord_individual_obj[indivial_i,:] = [16. 5. 12. 17.]
699 cord_individual_obj[indivial_i,:] = [17. 3. 36. 39.]
700 cord_individual_obj[indivial_i,:] = [18. 4. 44. 48.]
701 cord_individual_obj[indivial_i,:] = [19. 5. 44. 49.]
702
703 min(cord_individual_obj[:,3]) = 11.0
704 historl_G_best_iter[iter,3] = 11.0
705 Begin iteration:
706
707 iter = 26
708 cord_individual_obj[indivial_i,:] = [ 0. 6. 12. 18.]
709 cord_individual_obj[indivial_i,:] = [ 1. 3. 118. 121.]
710 cord_individual_obj[indivial_i,:] = [ 2. 5. 40. 45.]
711 cord_individual_obj[indivial_i,:] = [ 3. 3. 118. 121.]
712 cord_individual_obj[indivial_i,:] = [ 4. 4. 84. 88.]
713 cord_individual_obj[indivial_i,:] = [ 5. 6. 8. 14.]
714 cord_individual_obj[indivial_i,:] = [ 6. 6. 8. 14.]
715 cord_individual_obj[indivial_i,:] = [ 7. 3. 8. 11.]
716 cord_individual_obj[indivial_i,:] = [ 8. 6. 44. 50.]
717 cord_individual_obj[indivial_i,:] = [ 9. 6. 12. 18.]
718 cord_individual_obj[indivial_i,:] = [10. 5. 68. 73.]
719 cord_individual_obj[indivial_i,:] = [11. 4. 60. 64.]
720 cord_individual_obj[indivial_i,:] = [12. 4. 18. 22.]
721 cord_individual_obj[indivial_i,:] = [13. 4. 54. 58.]
722 cord_individual_obj[indivial_i,:] = [14. 5. 54. 59.]
723 cord_individual_obj[indivial_i,:] = [15. 5. 38. 43.]
724 cord_individual_obj[indivial_i,:] = [16. 6. 8. 14.]
725 cord_individual_obj[indivial_i,:] = [17. 4. 18. 22.]
726 cord_individual_obj[indivial_i,:] = [18. 4. 58. 62.]
727 cord_individual_obj[indivial_i,:] = [19. 5. 26. 31.]
728
729 min(cord_individual_obj[:,3]) = 11.0
730 historl_G_best_iter[iter,3] = 11.0
731 Begin iteration:
732
733 iter = 27
734 cord_individual_obj[indivial_i,:] = [ 0. 4. 12. 16.]
735 cord_individual_obj[indivial_i,:] = [ 1. 3. 8. 11.]
736 cord_individual_obj[indivial_i,:] = [ 2. 5. 20. 25.]
737 cord_individual_obj[indivial_i,:] = [ 3. 3. 106. 109.]
738 cord_individual_obj[indivial_i,:] = [ 4. 4. 30. 34.]
739 cord_individual_obj[indivial_i,:] = [ 5. 6. 12. 18.]
740 cord_individual_obj[indivial_i,:] = [ 6. 6. 8. 14.]
741 cord_individual_obj[indivial_i,:] = [ 7. 4. 106. 110.]
742 cord_individual_obj[indivial_i,:] = [ 8. 6. 44. 50.]
743 cord_individual_obj[indivial_i,:] = [ 9. 6. 8. 14.]
744 cord_individual_obj[indivial_i,:] = [10. 5. 72. 77.]
745 cord_individual_obj[indivial_i,:] = [11. 4. 74. 78.]
746 cord_individual_obj[indivial_i,:] = [12. 4. 30. 34.]
747 cord_individual_obj[indivial_i,:] = [13. 4. 54. 58.]
748 cord_individual_obj[indivial_i,:] = [14. 4. 44. 48.]
749 cord_individual_obj[indivial_i,:] = [15. 4. 76. 80.]
750 cord_individual_obj[indivial_i,:] = [16. 4. 30. 34.]
751 cord_individual_obj[indivial_i,:] = [17. 4. 26. 30.]

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unknown

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752     cord_individual_obj[indivial_i, :] = [18. 4. 74. 78.]  
753     cord_individual_obj[indivial_i, :] = [19. 5. 34. 39.]  
754  
755     min(cord_individual_obj[:, 3]) = 11.0  
756     historl_G_best_iter[iter, 3] = 11.0  
757 Begin iteration:  
758  
759 iter = 28  
760     cord_individual_obj[indivial_i, :] = [ 0. 4. 48. 52.]  
761     cord_individual_obj[indivial_i, :] = [ 1. 3. 110. 113.]  
762     cord_individual_obj[indivial_i, :] = [ 2. 3. 28. 31.]  
763     cord_individual_obj[indivial_i, :] = [ 3. 4. 24. 28.]  
764     cord_individual_obj[indivial_i, :] = [ 4. 4. 36. 40.]  
765     cord_individual_obj[indivial_i, :] = [ 5. 4. 84. 88.]  
766     cord_individual_obj[indivial_i, :] = [ 6. 4. 28. 32.]  
767     cord_individual_obj[indivial_i, :] = [ 7. 3. 8. 11.]  
768     cord_individual_obj[indivial_i, :] = [ 8. 5. 46. 51.]  
769     cord_individual_obj[indivial_i, :] = [ 9. 5. 44. 49.]  
770     cord_individual_obj[indivial_i, :] = [10. 3. 56. 59.]  
771     cord_individual_obj[indivial_i, :] = [11. 4. 52. 56.]  
772     cord_individual_obj[indivial_i, :] = [12. 4. 28. 32.]  
773     cord_individual_obj[indivial_i, :] = [13. 4. 40. 44.]  
774     cord_individual_obj[indivial_i, :] = [14. 5. 54. 59.]  
775     cord_individual_obj[indivial_i, :] = [15. 5. 48. 53.]  
776     cord_individual_obj[indivial_i, :] = [16. 5. 76. 81.]  
777     cord_individual_obj[indivial_i, :] = [17. 3. 36. 39.]  
778     cord_individual_obj[indivial_i, :] = [18. 3. 44. 47.]  
779     cord_individual_obj[indivial_i, :] = [19. 5. 54. 59.]  
780  
781     min(cord_individual_obj[:, 3]) = 11.0  
782     historl_G_best_iter[iter, 3] = 11.0  
783 Begin iteration:  
784  
785 iter = 29  
786     cord_individual_obj[indivial_i, :] = [ 0. 6. 12. 18.]  
787     cord_individual_obj[indivial_i, :] = [ 1. 3. 8. 11.]  
788     cord_individual_obj[indivial_i, :] = [ 2. 5. 20. 25.]  
789     cord_individual_obj[indivial_i, :] = [ 3. 5. 108. 113.]  
790     cord_individual_obj[indivial_i, :] = [ 4. 4. 30. 34.]  
791     cord_individual_obj[indivial_i, :] = [ 5. 4. 20. 24.]  
792     cord_individual_obj[indivial_i, :] = [ 6. 4. 12. 16.]  
793     cord_individual_obj[indivial_i, :] = [ 7. 4. 106. 110.]  
794     cord_individual_obj[indivial_i, :] = [ 8. 6. 48. 54.]  
795     cord_individual_obj[indivial_i, :] = [ 9. 6. 24. 30.]  
796     cord_individual_obj[indivial_i, :] = [10. 5. 48. 53.]  
797     cord_individual_obj[indivial_i, :] = [11. 4. 54. 58.]  
798     cord_individual_obj[indivial_i, :] = [12. 4. 30. 34.]  
799     cord_individual_obj[indivial_i, :] = [13. 4. 54. 58.]  
800     cord_individual_obj[indivial_i, :] = [14. 4. 40. 44.]  
801     cord_individual_obj[indivial_i, :] = [15. 5. 70. 75.]  
802     cord_individual_obj[indivial_i, :] = [16. 6. 44. 50.]  
803     cord_individual_obj[indivial_i, :] = [17. 4. 26. 30.]  
804     cord_individual_obj[indivial_i, :] = [18. 4. 86. 90.]  
805     cord_individual_obj[indivial_i, :] = [19. 6. 44. 50.]  
806  
807     min(cord_individual_obj[:, 3]) = 11.0  
808     historl_G_best_iter[iter, 3] = 11.0  
809 Begin iteration:  
810  
811 iter = 30  
812     cord_individual_obj[indivial_i, :] = [ 0. 4. 68. 72.]  
813     cord_individual_obj[indivial_i, :] = [ 1. 3. 118. 121.]  
814     cord_individual_obj[indivial_i, :] = [ 2. 5. 52. 57.]  
815     cord_individual_obj[indivial_i, :] = [ 3. 3. 8. 11.]  
816     cord_individual_obj[indivial_i, :] = [ 4. 6. 48. 54.]  
817     cord_individual_obj[indivial_i, :] = [ 5. 6. 8. 14.]  
818     cord_individual_obj[indivial_i, :] = [ 6. 4. 18. 22.]  
819     cord_individual_obj[indivial_i, :] = [ 7. 5. 132. 137.]  
820     cord_individual_obj[indivial_i, :] = [ 8. 6. 44. 50.]  
821     cord_individual_obj[indivial_i, :] = [ 9. 4. 30. 34.]  
822     cord_individual_obj[indivial_i, :] = [10. 5. 38. 43.]  
823     cord_individual_obj[indivial_i, :] = [11. 5. 44. 49.]  
824     cord_individual_obj[indivial_i, :] = [12. 6. 14. 20.]  
825     cord_individual_obj[indivial_i, :] = [13. 4. 38. 42.]  
826     cord_individual_obj[indivial_i, :] = [14. 5. 54. 59.]  
827     cord_individual_obj[indivial_i, :] = [15. 4. 32. 36.]  
828     cord_individual_obj[indivial_i, :] = [16. 5. 8. 13.]  
829     cord_individual_obj[indivial_i, :] = [17. 6. 24. 30.]  
830     cord_individual_obj[indivial_i, :] = [18. 4. 62. 66.]  
831     cord_individual_obj[indivial_i, :] = [19. 6. 70. 76.]  
832  
833     min(cord_individual_obj[:, 3]) = 11.0  
834     historl_G_best_iter[iter, 3] = 11.0  
835 Begin iteration:
```

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836
837 iter = 31
838 cord_individual_obj[indivial_i, :] = [ 0.  4. 12. 16.]
839 cord_individual_obj[indivial_i, :] = [ 1.  3. 124. 127.]
840 cord_individual_obj[indivial_i, :] = [ 2.  4. 52. 56.]
841 cord_individual_obj[indivial_i, :] = [ 3.  3. 106. 109.]
842 cord_individual_obj[indivial_i, :] = [ 4.  4. 56. 60.]
843 cord_individual_obj[indivial_i, :] = [ 5.  4. 12. 16.]
844 cord_individual_obj[indivial_i, :] = [ 6.  4. 18. 22.]
845 cord_individual_obj[indivial_i, :] = [ 7.  3.  8. 11.]
846 cord_individual_obj[indivial_i, :] = [ 8.  5. 24. 29.]
847 cord_individual_obj[indivial_i, :] = [ 9.  6. 40. 46.]
848 cord_individual_obj[indivial_i, :] = [10. 4. 32. 36.]
849 cord_individual_obj[indivial_i, :] = [11. 6. 24. 30.]
850 cord_individual_obj[indivial_i, :] = [12. 4. 26. 30.]
851 cord_individual_obj[indivial_i, :] = [13. 4. 30. 34.]
852 cord_individual_obj[indivial_i, :] = [14. 5. 68. 73.]
853 cord_individual_obj[indivial_i, :] = [15. 4. 64. 68.]
854 cord_individual_obj[indivial_i, :] = [16. 6. 48. 54.]
855 cord_individual_obj[indivial_i, :] = [17. 4. 78. 82.]
856 cord_individual_obj[indivial_i, :] = [18. 4. 78. 82.]
857 cord_individual_obj[indivial_i, :] = [19. 6. 44. 50.]
858
859 min(cord_individual_obj[:, 3]) = 11.0
860 historl_G_best_iter[iter, 3] = 11.0
861 Begin iteration:
862
863 iter = 32
864 cord_individual_obj[indivial_i, :] = [ 0.  5. 30. 35.]
865 cord_individual_obj[indivial_i, :] = [ 1.  3.  8. 11.]
866 cord_individual_obj[indivial_i, :] = [ 2.  5. 36. 41.]
867 cord_individual_obj[indivial_i, :] = [ 3.  3. 44. 47.]
868 cord_individual_obj[indivial_i, :] = [ 4.  4. 18. 22.]
869 cord_individual_obj[indivial_i, :] = [ 5.  6.  8. 14.]
870 cord_individual_obj[indivial_i, :] = [ 6.  6. 12. 18.]
871 cord_individual_obj[indivial_i, :] = [ 7.  4. 106. 110.]
872 cord_individual_obj[indivial_i, :] = [ 8.  4. 60. 64.]
873 cord_individual_obj[indivial_i, :] = [ 9.  5. 30. 35.]
874 cord_individual_obj[indivial_i, :] = [10. 5. 40. 45.]
875 cord_individual_obj[indivial_i, :] = [11. 4. 28. 32.]
876 cord_individual_obj[indivial_i, :] = [12. 3. 56. 59.]
877 cord_individual_obj[indivial_i, :] = [13. 4. 76. 80.]
878 cord_individual_obj[indivial_i, :] = [14. 4. 44. 48.]
879 cord_individual_obj[indivial_i, :] = [15. 4. 84. 88.]
880 cord_individual_obj[indivial_i, :] = [16. 5. 44. 49.]
881 cord_individual_obj[indivial_i, :] = [17. 3. 40. 43.]
882 cord_individual_obj[indivial_i, :] = [18. 4. 70. 74.]
883 cord_individual_obj[indivial_i, :] = [19. 5. 68. 73.]
884
885 min(cord_individual_obj[:, 3]) = 11.0
886 historl_G_best_iter[iter, 3] = 11.0
887 Begin iteration:
888
889 iter = 33
890 cord_individual_obj[indivial_i, :] = [ 0.  5. 12. 17.]
891 cord_individual_obj[indivial_i, :] = [ 1.  3. 110. 113.]
892 cord_individual_obj[indivial_i, :] = [ 2.  4. 40. 44.]
893 cord_individual_obj[indivial_i, :] = [ 3.  5. 82. 87.]
894 cord_individual_obj[indivial_i, :] = [ 4.  4. 50. 54.]
895 cord_individual_obj[indivial_i, :] = [ 5.  4. 20. 24.]
896 cord_individual_obj[indivial_i, :] = [ 6.  4. 18. 22.]
897 cord_individual_obj[indivial_i, :] = [ 7.  3.  8. 11.]
898 cord_individual_obj[indivial_i, :] = [ 8.  5. 12. 17.]
899 cord_individual_obj[indivial_i, :] = [ 9.  6.  8. 14.]
900 cord_individual_obj[indivial_i, :] = [10. 4. 20. 24.]
901 cord_individual_obj[indivial_i, :] = [11. 4. 100. 104.]
902 cord_individual_obj[indivial_i, :] = [12. 4. 30. 34.]
903 cord_individual_obj[indivial_i, :] = [13. 4. 30. 34.]
904 cord_individual_obj[indivial_i, :] = [14. 5. 54. 59.]
905 cord_individual_obj[indivial_i, :] = [15. 5. 40. 45.]
906 cord_individual_obj[indivial_i, :] = [16. 6.  8. 14.]
907 cord_individual_obj[indivial_i, :] = [17. 4. 30. 34.]
908 cord_individual_obj[indivial_i, :] = [18. 4. 70. 74.]
909 cord_individual_obj[indivial_i, :] = [19. 6. 44. 50.]
910
911 min(cord_individual_obj[:, 3]) = 11.0
912 historl_G_best_iter[iter, 3] = 11.0
913 Begin iteration:
914
915 iter = 34
916 cord_individual_obj[indivial_i, :] = [ 0.  4. 30. 34.]
917 cord_individual_obj[indivial_i, :] = [ 1.  3.  8. 11.]
918 cord_individual_obj[indivial_i, :] = [ 2.  5. 20. 25.]
919 cord_individual_obj[indivial_i, :] = [ 3.  5. 60. 65.]

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920 cord_individual_obj[indivial_i, :] = [ 4. 4. 24. 28.]
921 cord_individual_obj[indivial_i, :] = [ 5. 6. 24. 30.]
922 cord_individual_obj[indivial_i, :] = [ 6. 6. 12. 18.]
923 cord_individual_obj[indivial_i, :] = [ 7. 4. 106. 110.]
924 cord_individual_obj[indivial_i, :] = [ 8. 6. 44. 50.]
925 cord_individual_obj[indivial_i, :] = [ 9. 4. 36. 40.]
926 cord_individual_obj[indivial_i, :] = [10. 5. 48. 53.]
927 cord_individual_obj[indivial_i, :] = [11. 4. 40. 44.]
928 cord_individual_obj[indivial_i, :] = [12. 3. 40. 43.]
929 cord_individual_obj[indivial_i, :] = [13. 4. 76. 80.]
930 cord_individual_obj[indivial_i, :] = [14. 4. 52. 56.]
931 cord_individual_obj[indivial_i, :] = [15. 5. 64. 69.]
932 cord_individual_obj[indivial_i, :] = [16. 4. 20. 24.]
933 cord_individual_obj[indivial_i, :] = [17. 4. 44. 48.]
934 cord_individual_obj[indivial_i, :] = [18. 4. 86. 90.]
935 cord_individual_obj[indivial_i, :] = [19. 4. 72. 76.]
936
937 min(cord_individual_obj[:, 3]) = 11.0
938 historl_G_best_iter[iter, 3] = 11.0
939 Begin iteration:
940
941 iter = 35
942 cord_individual_obj[indivial_i, :] = [ 0. 6. 12. 18.]
943 cord_individual_obj[indivial_i, :] = [ 1. 3. 110. 113.]
944 cord_individual_obj[indivial_i, :] = [ 2. 5. 20. 25.]
945 cord_individual_obj[indivial_i, :] = [ 3. 3. 86. 89.]
946 cord_individual_obj[indivial_i, :] = [ 4. 4. 30. 34.]
947 cord_individual_obj[indivial_i, :] = [ 5. 6. 12. 18.]
948 cord_individual_obj[indivial_i, :] = [ 6. 6. 12. 18.]
949 cord_individual_obj[indivial_i, :] = [ 7. 3. 8. 11.]
950 cord_individual_obj[indivial_i, :] = [ 8. 6. 44. 50.]
951 cord_individual_obj[indivial_i, :] = [ 9. 6. 8. 14.]
952 cord_individual_obj[indivial_i, :] = [10. 5. 44. 49.]
953 cord_individual_obj[indivial_i, :] = [11. 4. 62. 66.]
954 cord_individual_obj[indivial_i, :] = [12. 4. 30. 34.]
955 cord_individual_obj[indivial_i, :] = [13. 4. 60. 64.]
956 cord_individual_obj[indivial_i, :] = [14. 5. 68. 73.]
957 cord_individual_obj[indivial_i, :] = [15. 4. 64. 68.]
958 cord_individual_obj[indivial_i, :] = [16. 6. 12. 18.]
959 cord_individual_obj[indivial_i, :] = [17. 4. 24. 28.]
960 cord_individual_obj[indivial_i, :] = [18. 4. 76. 80.]
961 cord_individual_obj[indivial_i, :] = [19. 5. 34. 39.]
962
963 min(cord_individual_obj[:, 3]) = 11.0
964 historl_G_best_iter[iter, 3] = 11.0
965 Begin iteration:
966
967 iter = 36
968 cord_individual_obj[indivial_i, :] = [ 0. 5. 28. 33.]
969 cord_individual_obj[indivial_i, :] = [ 1. 3. 8. 11.]
970 cord_individual_obj[indivial_i, :] = [ 2. 4. 40. 44.]
971 cord_individual_obj[indivial_i, :] = [ 3. 5. 58. 63.]
972 cord_individual_obj[indivial_i, :] = [ 4. 4. 44. 48.]
973 cord_individual_obj[indivial_i, :] = [ 5. 4. 40. 44.]
974 cord_individual_obj[indivial_i, :] = [ 6. 4. 18. 22.]
975 cord_individual_obj[indivial_i, :] = [ 7. 4. 106. 110.]
976 cord_individual_obj[indivial_i, :] = [ 8. 4. 28. 32.]
977 cord_individual_obj[indivial_i, :] = [ 9. 5. 30. 35.]
978 cord_individual_obj[indivial_i, :] = [10. 4. 44. 48.]
979 cord_individual_obj[indivial_i, :] = [11. 4. 36. 40.]
980 cord_individual_obj[indivial_i, :] = [12. 3. 48. 51.]
981 cord_individual_obj[indivial_i, :] = [13. 4. 40. 44.]
982 cord_individual_obj[indivial_i, :] = [14. 4. 40. 44.]
983 cord_individual_obj[indivial_i, :] = [15. 5. 70. 75.]
984 cord_individual_obj[indivial_i, :] = [16. 4. 12. 16.]
985 cord_individual_obj[indivial_i, :] = [17. 3. 40. 43.]
986 cord_individual_obj[indivial_i, :] = [18. 4. 52. 56.]
987 cord_individual_obj[indivial_i, :] = [19. 5. 44. 49.]
988
989 min(cord_individual_obj[:, 3]) = 11.0
990 historl_G_best_iter[iter, 3] = 11.0
991 Begin iteration:
992
993 iter = 37
994 cord_individual_obj[indivial_i, :] = [ 0. 6. 12. 18.]
995 cord_individual_obj[indivial_i, :] = [ 1. 3. 110. 113.]
996 cord_individual_obj[indivial_i, :] = [ 2. 5. 20. 25.]
997 cord_individual_obj[indivial_i, :] = [ 3. 5. 76. 81.]
998 cord_individual_obj[indivial_i, :] = [ 4. 4. 30. 34.]
999 cord_individual_obj[indivial_i, :] = [ 5. 6. 12. 18.]
1000 cord_individual_obj[indivial_i, :] = [ 6. 6. 12. 18.]
1001 cord_individual_obj[indivial_i, :] = [ 7. 3. 8. 11.]
1002 cord_individual_obj[indivial_i, :] = [ 8. 6. 44. 50.]
1003 cord_individual_obj[indivial_i, :] = [ 9. 6. 8. 14.]

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1004 cord_individual_obj[individual_i, :] = [10. 5. 44. 49.]
1005 cord_individual_obj[individual_i, :] = [11. 4. 72. 76.]
1006 cord_individual_obj[individual_i, :] = [12. 4. 30. 34.]
1007 cord_individual_obj[individual_i, :] = [13. 4. 60. 64.]
1008 cord_individual_obj[individual_i, :] = [14. 5. 74. 79.]
1009 cord_individual_obj[individual_i, :] = [15. 5. 70. 75.]
1010 cord_individual_obj[individual_i, :] = [16. 6. 12. 18.]
1011 cord_individual_obj[individual_i, :] = [17. 4. 24. 28.]
1012 cord_individual_obj[individual_i, :] = [18. 4. 70. 74.]
1013 cord_individual_obj[individual_i, :] = [19. 4. 56. 60.]
1014
1015 min(cord_individual_obj[:, 3]) = 11.0
1016 historl_G_best_iter[iter, 3] = 11.0
1017 Begin iteration:
1018
1019 iter = 38
1020 cord_individual_obj[individual_i, :] = [ 0. 5. 12. 17.]
1021 cord_individual_obj[individual_i, :] = [ 1. 3. 8. 11.]
1022 cord_individual_obj[individual_i, :] = [ 2. 5. 20. 25.]
1023 cord_individual_obj[individual_i, :] = [ 3. 5. 92. 97.]
1024 cord_individual_obj[individual_i, :] = [ 4. 4. 24. 28.]
1025 cord_individual_obj[individual_i, :] = [ 5. 6. 12. 18.]
1026 cord_individual_obj[individual_i, :] = [ 6. 6. 12. 18.]
1027 cord_individual_obj[individual_i, :] = [ 7. 5. 98. 103.]
1028 cord_individual_obj[individual_i, :] = [ 8. 6. 44. 50.]
1029 cord_individual_obj[individual_i, :] = [ 9. 6. 8. 14.]
1030 cord_individual_obj[individual_i, :] = [10. 5. 44. 49.]
1031 cord_individual_obj[individual_i, :] = [11. 4. 82. 86.]
1032 cord_individual_obj[individual_i, :] = [12. 4. 30. 34.]
1033 cord_individual_obj[individual_i, :] = [13. 4. 54. 58.]
1034 cord_individual_obj[individual_i, :] = [14. 4. 44. 48.]
1035 cord_individual_obj[individual_i, :] = [15. 4. 84. 88.]
1036 cord_individual_obj[individual_i, :] = [16. 5. 12. 17.]
1037 cord_individual_obj[individual_i, :] = [17. 4. 24. 28.]
1038 cord_individual_obj[individual_i, :] = [18. 4. 74. 78.]
1039 cord_individual_obj[individual_i, :] = [19. 4. 34. 38.]
1040
1041 min(cord_individual_obj[:, 3]) = 11.0
1042 historl_G_best_iter[iter, 3] = 11.0
1043 Begin iteration:
1044
1045 iter = 39
1046 cord_individual_obj[individual_i, :] = [ 0. 5. 60. 65.]
1047 cord_individual_obj[individual_i, :] = [ 1. 3. 118. 121.]
1048 cord_individual_obj[individual_i, :] = [ 2. 5. 32. 37.]
1049 cord_individual_obj[individual_i, :] = [ 3. 3. 36. 39.]
1050 cord_individual_obj[individual_i, :] = [ 4. 6. 60. 66.]
1051 cord_individual_obj[individual_i, :] = [ 5. 3. 30. 33.]
1052 cord_individual_obj[individual_i, :] = [ 6. 6. 18. 24.]
1053 cord_individual_obj[individual_i, :] = [ 7. 3. 8. 11.]
1054 cord_individual_obj[individual_i, :] = [ 8. 6. 8. 14.]
1055 cord_individual_obj[individual_i, :] = [ 9. 4. 76. 80.]
1056 cord_individual_obj[individual_i, :] = [10. 5. 72. 77.]
1057 cord_individual_obj[individual_i, :] = [11. 5. 44. 49.]
1058 cord_individual_obj[individual_i, :] = [12. 6. 14. 20.]
1059 cord_individual_obj[individual_i, :] = [13. 5. 8. 13.]
1060 cord_individual_obj[individual_i, :] = [14. 5. 60. 65.]
1061 cord_individual_obj[individual_i, :] = [15. 4. 38. 42.]
1062 cord_individual_obj[individual_i, :] = [16. 6. 14. 20.]
1063 cord_individual_obj[individual_i, :] = [17. 6. 12. 18.]
1064 cord_individual_obj[individual_i, :] = [18. 4. 70. 74.]
1065 cord_individual_obj[individual_i, :] = [19. 6. 24. 30.]
1066
1067 min(cord_individual_obj[:, 3]) = 11.0
1068 historl_G_best_iter[iter, 3] = 11.0
1069 Begin iteration:
1070
1071 iter = 40
1072 cord_individual_obj[individual_i, :] = [ 0. 6. 8. 14.]
1073 cord_individual_obj[individual_i, :] = [ 1. 3. 8. 11.]
1074 cord_individual_obj[individual_i, :] = [ 2. 4. 20. 24.]
1075 cord_individual_obj[individual_i, :] = [ 3. 5. 30. 35.]
1076 cord_individual_obj[individual_i, :] = [ 4. 4. 40. 44.]
1077 cord_individual_obj[individual_i, :] = [ 5. 6. 24. 30.]
1078 cord_individual_obj[individual_i, :] = [ 6. 4. 18. 22.]
1079 cord_individual_obj[individual_i, :] = [ 7. 5. 98. 103.]
1080 cord_individual_obj[individual_i, :] = [ 8. 4. 58. 62.]
1081 cord_individual_obj[individual_i, :] = [ 9. 6. 8. 14.]
1082 cord_individual_obj[individual_i, :] = [10. 4. 64. 68.]
1083 cord_individual_obj[individual_i, :] = [11. 4. 44. 48.]
1084 cord_individual_obj[individual_i, :] = [12. 3. 40. 43.]
1085 cord_individual_obj[individual_i, :] = [13. 4. 40. 44.]
1086 cord_individual_obj[individual_i, :] = [14. 4. 44. 48.]
1087 cord_individual_obj[individual_i, :] = [15. 5. 44. 49.]

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unknown

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1088 cord_individual_obj[individual_i, :] = [16. 4. 20. 24.]  
1089 cord_individual_obj[individual_i, :] = [17. 4. 44. 48.]  
1090 cord_individual_obj[individual_i, :] = [18. 4. 48. 52.]  
1091 cord_individual_obj[individual_i, :] = [19. 4. 74. 78.]  
1092  
1093 min(cord_individual_obj[:, 3]) = 11.0  
1094 history_G_best_iter[iter, 3] = 11.0  
1095 Iteration calculate over  
1096  
1097  
1098  
1099  
1100 All item are in Bin and:  
1101 Bin area = 1080  
1102 Real_area = 81.0  
1103 Proportion_of_area = 0.075  
1104 BEST_CHROM =  
1105     berth: [ 7.5 26. 20. 2.5 15.5 12. ]  
1106     time: [0. 0. 0. 0. 0.]  
1107     num_QC: [2. 2. 4. 3. 3. 3.]  
1108 Objective function values and some other indicators:  
1109 Obj0 = 3.00      Obj1 = 8.00      Obj0 + Obj1 = 11.00  
1110 Total movement of crane: 8.00  
1111 Total waiting time in berth position: 0.00  
1112 Total index of q during berthing: 662.00  
1113 Specific arrangement for each vessel:  
1114 V_id: 0          li: 5.0           xi: 7.5           bow of i: 5.0           tail of i: 10.0           gama_i0: 0.0           gama_i1: 1.  
0           gama_i1 + 1: 2.0           gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 80.0           work load_i  
: 80.0           work load gap_i: 0  
1115 V_id: 1          li: 6.0           xi: 26.0          bow of i: 23.0           tail of i: 29.0           gama_i0: 0.0           gama_i1:  
2.0           gama_i1 + 1: 3.0           gama_i1 - gama_i0: 2.0           duration_time_i: 3.0           demand_i: 120.0           work  
load_i: 120.0           work load gap_i: 0  
1116 V_id: 2          li: 6.0           xi: 20.0           bow of i: 17.0           tail of i: 23.0           gama_i0: 0.0           gama_i1:  
3.0           gama_i1 + 1: 4.0           gama_i1 - gama_i0: 3.0           duration_time_i: 4.0           demand_i: 260.0           work  
load_i: 260.0           work load gap_i: 0  
1117 V_id: 3          li: 5.0           xi: 2.5            bow of i: 0.0           tail of i: 5.0           gama_i0: 0.0           gama_i1: 1.0  
: 80.0           gama_i1 + 1: 2.0           gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 80.0           work load_i  
           work load gap_i: 0  
1118 V_id: 4          li: 3.0           xi: 15.5          bow of i: 14.0           tail of i: 17.0           gama_i0: 0.0           gama_i1:  
3.0           gama_i1 + 1: 4.0           gama_i1 - gama_i0: 3.0           duration_time_i: 4.0           demand_i: 200.0           work  
load_i: 200.0           work load gap_i: 0  
1119 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:  
3.0           gama_i1 + 1: 4.0           gama_i1 - gama_i0: 3.0           duration_time_i: 4.0           demand_i: 220.0           work  
load_i: 220.0           work load gap_i: 0  
1120  
1121 Algorithm finished and the total CPU time: 256 s  
1122 End  
1123
```