

unknown

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80 historl_G_best_iter[iter, 3] = 16.0
81 Begin iteration:
82
83 iter = 2
84 cord_individual_obj[indivial_i, :] = [ 0. 5. 68. 73.]
85 cord_individual_obj[indivial_i, :] = [ 1. 4. 62. 66.]
86 cord_individual_obj[indivial_i, :] = [ 2. 4. 60. 64.]
87 cord_individual_obj[indivial_i, :] = [ 3. 4. 68. 72.]
88 cord_individual_obj[indivial_i, :] = [ 4. 4. 56. 60.]
89 cord_individual_obj[indivial_i, :] = [ 5. 4. 68. 72.]
90 cord_individual_obj[indivial_i, :] = [ 6. 4. 60. 64.]
91 cord_individual_obj[indivial_i, :] = [ 7. 4. 66. 70.]
92 cord_individual_obj[indivial_i, :] = [ 8. 4. 74. 78.]
93 cord_individual_obj[indivial_i, :] = [ 9. 4. 68. 72.]
94 cord_individual_obj[indivial_i, :] = [10. 4. 56. 60.]
95 cord_individual_obj[indivial_i, :] = [11. 4. 68. 72.]
96 cord_individual_obj[indivial_i, :] = [12. 4. 68. 72.]
97 cord_individual_obj[indivial_i, :] = [13. 4. 60. 64.]
98 cord_individual_obj[indivial_i, :] = [14. 4. 64. 68.]
99 cord_individual_obj[indivial_i, :] = [15. 4. 60. 64.]
100 cord_individual_obj[indivial_i, :] = [16. 4. 12. 16.]
101 cord_individual_obj[indivial_i, :] = [17. 4. 66. 70.]
102 cord_individual_obj[indivial_i, :] = [18. 4. 68. 72.]
103 cord_individual_obj[indivial_i, :] = [19. 4. 74. 78.]
104
105 min(cord_individual_obj[:, 3]) = 16.0
106 historl_G_best_iter[iter, 3] = 16.0
107 Begin iteration:
108
109 iter = 3
110 cord_individual_obj[indivial_i, :] = [ 0. 5. 68. 73.]
111 cord_individual_obj[indivial_i, :] = [ 1. 4. 60. 64.]
112 cord_individual_obj[indivial_i, :] = [ 2. 4. 40. 44.]
113 cord_individual_obj[indivial_i, :] = [ 3. 4. 38. 42.]
114 cord_individual_obj[indivial_i, :] = [ 4. 4. 44. 48.]
115 cord_individual_obj[indivial_i, :] = [ 5. 4. 68. 72.]
116 cord_individual_obj[indivial_i, :] = [ 6. 5. 60. 65.]
117 cord_individual_obj[indivial_i, :] = [ 7. 4. 38. 42.]
118 cord_individual_obj[indivial_i, :] = [ 8. 4. 12. 16.]
119 cord_individual_obj[indivial_i, :] = [ 9. 5. 68. 73.]
120 cord_individual_obj[indivial_i, :] = [10. 5. 44. 49.]
121 cord_individual_obj[indivial_i, :] = [11. 4. 44. 48.]
122 cord_individual_obj[indivial_i, :] = [12. 5. 44. 49.]
123 cord_individual_obj[indivial_i, :] = [13. 4. 74. 78.]
124 cord_individual_obj[indivial_i, :] = [14. 5. 60. 65.]
125 cord_individual_obj[indivial_i, :] = [15. 4. 44. 48.]
126 cord_individual_obj[indivial_i, :] = [16. 4. 46. 50.]
127 cord_individual_obj[indivial_i, :] = [17. 4. 38. 42.]
128 cord_individual_obj[indivial_i, :] = [18. 5. 68. 73.]
129 cord_individual_obj[indivial_i, :] = [19. 4. 52. 56.]
130
131 min(cord_individual_obj[:, 3]) = 16.0
132 historl_G_best_iter[iter, 3] = 16.0
133 Begin iteration:
134
135 iter = 4
136 cord_individual_obj[indivial_i, :] = [ 0. 5. 68. 73.]
137 cord_individual_obj[indivial_i, :] = [ 1. 4. 68. 72.]
138 cord_individual_obj[indivial_i, :] = [ 2. 4. 56. 60.]
139 cord_individual_obj[indivial_i, :] = [ 3. 4. 68. 72.]
140 cord_individual_obj[indivial_i, :] = [ 4. 4. 60. 64.]
141 cord_individual_obj[indivial_i, :] = [ 5. 4. 68. 72.]
142 cord_individual_obj[indivial_i, :] = [ 6. 4. 60. 64.]
143 cord_individual_obj[indivial_i, :] = [ 7. 4. 66. 70.]
144 cord_individual_obj[indivial_i, :] = [ 8. 4. 74. 78.]
145 cord_individual_obj[indivial_i, :] = [ 9. 4. 68. 72.]
146 cord_individual_obj[indivial_i, :] = [10. 4. 60. 64.]
147 cord_individual_obj[indivial_i, :] = [11. 4. 68. 72.]
148 cord_individual_obj[indivial_i, :] = [12. 4. 68. 72.]
149 cord_individual_obj[indivial_i, :] = [13. 4. 12. 16.]
150 cord_individual_obj[indivial_i, :] = [14. 4. 68. 72.]
151 cord_individual_obj[indivial_i, :] = [15. 4. 60. 64.]
152 cord_individual_obj[indivial_i, :] = [16. 4. 72. 76.]
153 cord_individual_obj[indivial_i, :] = [17. 4. 68. 72.]
154 cord_individual_obj[indivial_i, :] = [18. 4. 68. 72.]
155 cord_individual_obj[indivial_i, :] = [19. 4. 70. 74.]
156
157 min(cord_individual_obj[:, 3]) = 16.0
158 historl_G_best_iter[iter, 3] = 16.0
159 Begin iteration:
160
161 iter = 5
162 cord_individual_obj[indivial_i, :] = [ 0. 5. 68. 73.]
163 cord_individual_obj[indivial_i, :] = [ 1. 4. 60. 64.]

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164 cord_individual_obj[indivial_i,:] = [ 2. 4. 44. 48.]
165 cord_individual_obj[indivial_i,:] = [ 3. 4. 38. 42.]
166 cord_individual_obj[indivial_i,:] = [ 4. 4. 44. 48.]
167 cord_individual_obj[indivial_i,:] = [ 5. 4. 68. 72.]
168 cord_individual_obj[indivial_i,:] = [ 6. 5. 60. 65.]
169 cord_individual_obj[indivial_i,:] = [ 7. 4. 38. 42.]
170 cord_individual_obj[indivial_i,:] = [ 8. 4. 12. 16.]
171 cord_individual_obj[indivial_i,:] = [ 9. 5. 68. 73.]
172 cord_individual_obj[indivial_i,:] = [10. 5. 44. 49.]
173 cord_individual_obj[indivial_i,:] = [11. 4. 44. 48.]
174 cord_individual_obj[indivial_i,:] = [12. 5. 44. 49.]
175 cord_individual_obj[indivial_i,:] = [13. 4. 60. 64.]
176 cord_individual_obj[indivial_i,:] = [14. 5. 60. 65.]
177 cord_individual_obj[indivial_i,:] = [15. 4. 44. 48.]
178 cord_individual_obj[indivial_i,:] = [16. 4. 46. 50.]
179 cord_individual_obj[indivial_i,:] = [17. 4. 38. 42.]
180 cord_individual_obj[indivial_i,:] = [18. 5. 68. 73.]
181 cord_individual_obj[indivial_i,:] = [19. 4. 60. 64.]
182
183 min(cord_individual_obj[:,3]) = 16.0
184 historl_G_best_iter[iter, 3] = 16.0
185 Begin iteration:
186
187 iter = 6
188 cord_individual_obj[indivial_i,:] = [ 0. 4. 12. 16.]
189 cord_individual_obj[indivial_i,:] = [ 1. 4. 60. 64.]
190 cord_individual_obj[indivial_i,:] = [ 2. 4. 38. 42.]
191 cord_individual_obj[indivial_i,:] = [ 3. 4. 46. 50.]
192 cord_individual_obj[indivial_i,:] = [ 4. 4. 38. 42.]
193 cord_individual_obj[indivial_i,:] = [ 5. 4. 68. 72.]
194 cord_individual_obj[indivial_i,:] = [ 6. 5. 60. 65.]
195 cord_individual_obj[indivial_i,:] = [ 7. 4. 38. 42.]
196 cord_individual_obj[indivial_i,:] = [ 8. 4. 74. 78.]
197 cord_individual_obj[indivial_i,:] = [ 9. 5. 68. 73.]
198 cord_individual_obj[indivial_i,:] = [10. 5. 38. 43.]
199 cord_individual_obj[indivial_i,:] = [11. 4. 44. 48.]
200 cord_individual_obj[indivial_i,:] = [12. 5. 44. 49.]
201 cord_individual_obj[indivial_i,:] = [13. 4. 60. 64.]
202 cord_individual_obj[indivial_i,:] = [14. 5. 60. 65.]
203 cord_individual_obj[indivial_i,:] = [15. 4. 38. 42.]
204 cord_individual_obj[indivial_i,:] = [16. 4. 46. 50.]
205 cord_individual_obj[indivial_i,:] = [17. 4. 38. 42.]
206 cord_individual_obj[indivial_i,:] = [18. 5. 62. 67.]
207 cord_individual_obj[indivial_i,:] = [19. 4. 60. 64.]
208
209 min(cord_individual_obj[:,3]) = 16.0
210 historl_G_best_iter[iter, 3] = 16.0
211 Begin iteration:
212
213 iter = 7
214 cord_individual_obj[indivial_i,:] = [ 0. 5. 62. 67.]
215 cord_individual_obj[indivial_i,:] = [ 1. 4. 60. 64.]
216 cord_individual_obj[indivial_i,:] = [ 2. 4. 38. 42.]
217 cord_individual_obj[indivial_i,:] = [ 3. 4. 38. 42.]
218 cord_individual_obj[indivial_i,:] = [ 4. 4. 38. 42.]
219 cord_individual_obj[indivial_i,:] = [ 5. 4. 64. 68.]
220 cord_individual_obj[indivial_i,:] = [ 6. 5. 60. 65.]
221 cord_individual_obj[indivial_i,:] = [ 7. 4. 38. 42.]
222 cord_individual_obj[indivial_i,:] = [ 8. 4. 12. 16.]
223 cord_individual_obj[indivial_i,:] = [ 9. 5. 72. 77.]
224 cord_individual_obj[indivial_i,:] = [10. 5. 38. 43.]
225 cord_individual_obj[indivial_i,:] = [11. 4. 44. 48.]
226 cord_individual_obj[indivial_i,:] = [12. 5. 44. 49.]
227 cord_individual_obj[indivial_i,:] = [13. 4. 72. 76.]
228 cord_individual_obj[indivial_i,:] = [14. 5. 60. 65.]
229 cord_individual_obj[indivial_i,:] = [15. 4. 46. 50.]
230 cord_individual_obj[indivial_i,:] = [16. 4. 46. 50.]
231 cord_individual_obj[indivial_i,:] = [17. 4. 38. 42.]
232 cord_individual_obj[indivial_i,:] = [18. 5. 68. 73.]
233 cord_individual_obj[indivial_i,:] = [19. 4. 60. 64.]
234
235 min(cord_individual_obj[:,3]) = 16.0
236 historl_G_best_iter[iter, 3] = 16.0
237 Begin iteration:
238
239 iter = 8
240 cord_individual_obj[indivial_i,:] = [ 0. 5. 64. 69.]
241 cord_individual_obj[indivial_i,:] = [ 1. 4. 60. 64.]
242 cord_individual_obj[indivial_i,:] = [ 2. 4. 46. 50.]
243 cord_individual_obj[indivial_i,:] = [ 3. 4. 46. 50.]
244 cord_individual_obj[indivial_i,:] = [ 4. 4. 38. 42.]
245 cord_individual_obj[indivial_i,:] = [ 5. 4. 70. 74.]
246 cord_individual_obj[indivial_i,:] = [ 6. 5. 56. 61.]
247 cord_individual_obj[indivial_i,:] = [ 7. 4. 38. 42.]

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248 cord_individual_obj[indivial_i,:] = [ 8. 4. 74. 78.]
249 cord_individual_obj[indivial_i,:] = [ 9. 4. 12. 16.]
250 cord_individual_obj[indivial_i,:] = [10. 5. 38. 43.]
251 cord_individual_obj[indivial_i,:] = [11. 4. 38. 42.]
252 cord_individual_obj[indivial_i,:] = [12. 5. 44. 49.]
253 cord_individual_obj[indivial_i,:] = [13. 4. 60. 64.]
254 cord_individual_obj[indivial_i,:] = [14. 5. 56. 61.]
255 cord_individual_obj[indivial_i,:] = [15. 4. 38. 42.]
256 cord_individual_obj[indivial_i,:] = [16. 4. 38. 42.]
257 cord_individual_obj[indivial_i,:] = [17. 4. 38. 42.]
258 cord_individual_obj[indivial_i,:] = [18. 5. 58. 63.]
259 cord_individual_obj[indivial_i,:] = [19. 4. 62. 66.]
260
261 min(cord_individual_obj[:,3]) = 16.0
262 historl_G_best_iter[iter,3] = 16.0
263 Begin iteration:
264
265 iter = 9
266 cord_individual_obj[indivial_i,:] = [ 0. 5. 58. 63.]
267 cord_individual_obj[indivial_i,:] = [ 1. 4. 56. 60.]
268 cord_individual_obj[indivial_i,:] = [ 2. 4. 38. 42.]
269 cord_individual_obj[indivial_i,:] = [ 3. 4. 38. 42.]
270 cord_individual_obj[indivial_i,:] = [ 4. 4. 48. 52.]
271 cord_individual_obj[indivial_i,:] = [ 5. 4. 68. 72.]
272 cord_individual_obj[indivial_i,:] = [ 6. 5. 58. 63.]
273 cord_individual_obj[indivial_i,:] = [ 7. 4. 46. 50.]
274 cord_individual_obj[indivial_i,:] = [ 8. 4. 12. 16.]
275 cord_individual_obj[indivial_i,:] = [ 9. 5. 68. 73.]
276 cord_individual_obj[indivial_i,:] = [10. 5. 38. 43.]
277 cord_individual_obj[indivial_i,:] = [11. 4. 50. 54.]
278 cord_individual_obj[indivial_i,:] = [12. 5. 38. 43.]
279 cord_individual_obj[indivial_i,:] = [13. 4. 68. 72.]
280 cord_individual_obj[indivial_i,:] = [14. 5. 56. 61.]
281 cord_individual_obj[indivial_i,:] = [15. 4. 46. 50.]
282 cord_individual_obj[indivial_i,:] = [16. 4. 46. 50.]
283 cord_individual_obj[indivial_i,:] = [17. 4. 38. 42.]
284 cord_individual_obj[indivial_i,:] = [18. 5. 60. 65.]
285 cord_individual_obj[indivial_i,:] = [19. 4. 60. 64.]
286
287 min(cord_individual_obj[:,3]) = 16.0
288 historl_G_best_iter[iter,3] = 16.0
289 Begin iteration:
290
291 iter = 10
292 cord_individual_obj[indivial_i,:] = [ 0. 5. 64. 69.]
293 cord_individual_obj[indivial_i,:] = [ 1. 4. 62. 66.]
294 cord_individual_obj[indivial_i,:] = [ 2. 4. 46. 50.]
295 cord_individual_obj[indivial_i,:] = [ 3. 4. 46. 50.]
296 cord_individual_obj[indivial_i,:] = [ 4. 4. 38. 42.]
297 cord_individual_obj[indivial_i,:] = [ 5. 4. 70. 74.]
298 cord_individual_obj[indivial_i,:] = [ 6. 5. 60. 65.]
299 cord_individual_obj[indivial_i,:] = [ 7. 4. 38. 42.]
300 cord_individual_obj[indivial_i,:] = [ 8. 4. 74. 78.]
301 cord_individual_obj[indivial_i,:] = [ 9. 4. 12. 16.]
302 cord_individual_obj[indivial_i,:] = [10. 5. 38. 43.]
303 cord_individual_obj[indivial_i,:] = [11. 4. 44. 48.]
304 cord_individual_obj[indivial_i,:] = [12. 5. 44. 49.]
305 cord_individual_obj[indivial_i,:] = [13. 4. 60. 64.]
306 cord_individual_obj[indivial_i,:] = [14. 5. 62. 67.]
307 cord_individual_obj[indivial_i,:] = [15. 4. 46. 50.]
308 cord_individual_obj[indivial_i,:] = [16. 4. 46. 50.]
309 cord_individual_obj[indivial_i,:] = [17. 4. 38. 42.]
310 cord_individual_obj[indivial_i,:] = [18. 5. 68. 73.]
311 cord_individual_obj[indivial_i,:] = [19. 4. 60. 64.]
312
313 min(cord_individual_obj[:,3]) = 16.0
314 historl_G_best_iter[iter,3] = 16.0
315 Begin iteration:
316
317 iter = 11
318 cord_individual_obj[indivial_i,:] = [ 0. 5. 68. 73.]
319 cord_individual_obj[indivial_i,:] = [ 1. 4. 68. 72.]
320 cord_individual_obj[indivial_i,:] = [ 2. 4. 72. 76.]
321 cord_individual_obj[indivial_i,:] = [ 3. 4. 68. 72.]
322 cord_individual_obj[indivial_i,:] = [ 4. 4. 68. 72.]
323 cord_individual_obj[indivial_i,:] = [ 5. 4. 74. 78.]
324 cord_individual_obj[indivial_i,:] = [ 6. 4. 60. 64.]
325 cord_individual_obj[indivial_i,:] = [ 7. 4. 66. 70.]
326 cord_individual_obj[indivial_i,:] = [ 8. 4. 12. 16.]
327 cord_individual_obj[indivial_i,:] = [ 9. 5. 68. 73.]
328 cord_individual_obj[indivial_i,:] = [10. 4. 68. 72.]
329 cord_individual_obj[indivial_i,:] = [11. 4. 74. 78.]
330 cord_individual_obj[indivial_i,:] = [12. 4. 68. 72.]
331 cord_individual_obj[indivial_i,:] = [13. 4. 60. 64.]

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332 cord_individual_obj[indivial_i,:] = [14. 4. 68. 72.]
333 cord_individual_obj[indivial_i,:] = [15. 4. 68. 72.]
334 cord_individual_obj[indivial_i,:] = [16. 4. 72. 76.]
335 cord_individual_obj[indivial_i,:] = [17. 4. 68. 72.]
336 cord_individual_obj[indivial_i,:] = [18. 4. 68. 72.]
337 cord_individual_obj[indivial_i,:] = [19. 4. 68. 72.]
338
339 min(cord_individual_obj[:, 3]) = 16.0
340 historl_G_best_iter[iter, 3] = 16.0
341 Begin iteration:
342
343 iter = 12
344 cord_individual_obj[indivial_i,:] = [ 0. 5. 58. 63.]
345 cord_individual_obj[indivial_i,:] = [ 1. 4. 74. 78.]
346 cord_individual_obj[indivial_i,:] = [ 2. 4. 38. 42.]
347 cord_individual_obj[indivial_i,:] = [ 3. 4. 46. 50.]
348 cord_individual_obj[indivial_i,:] = [ 4. 4. 50. 54.]
349 cord_individual_obj[indivial_i,:] = [ 5. 4. 12. 16.]
350 cord_individual_obj[indivial_i,:] = [ 6. 5. 58. 63.]
351 cord_individual_obj[indivial_i,:] = [ 7. 4. 46. 50.]
352 cord_individual_obj[indivial_i,:] = [ 8. 4. 74. 78.]
353 cord_individual_obj[indivial_i,:] = [ 9. 5. 68. 73.]
354 cord_individual_obj[indivial_i,:] = [10. 5. 38. 43.]
355 cord_individual_obj[indivial_i,:] = [11. 4. 50. 54.]
356 cord_individual_obj[indivial_i,:] = [12. 5. 44. 49.]
357 cord_individual_obj[indivial_i,:] = [13. 4. 74. 78.]
358 cord_individual_obj[indivial_i,:] = [14. 5. 56. 61.]
359 cord_individual_obj[indivial_i,:] = [15. 4. 46. 50.]
360 cord_individual_obj[indivial_i,:] = [16. 4. 38. 42.]
361 cord_individual_obj[indivial_i,:] = [17. 4. 38. 42.]
362 cord_individual_obj[indivial_i,:] = [18. 5. 58. 63.]
363 cord_individual_obj[indivial_i,:] = [19. 4. 56. 60.]
364
365 min(cord_individual_obj[:, 3]) = 16.0
366 historl_G_best_iter[iter, 3] = 16.0
367 Begin iteration:
368
369 iter = 13
370 cord_individual_obj[indivial_i,:] = [ 0. 5. 62. 67.]
371 cord_individual_obj[indivial_i,:] = [ 1. 4. 12. 16.]
372 cord_individual_obj[indivial_i,:] = [ 2. 4. 60. 64.]
373 cord_individual_obj[indivial_i,:] = [ 3. 4. 68. 72.]
374 cord_individual_obj[indivial_i,:] = [ 4. 4. 68. 72.]
375 cord_individual_obj[indivial_i,:] = [ 5. 4. 68. 72.]
376 cord_individual_obj[indivial_i,:] = [ 6. 4. 60. 64.]
377 cord_individual_obj[indivial_i,:] = [ 7. 4. 66. 70.]
378 cord_individual_obj[indivial_i,:] = [ 8. 4. 74. 78.]
379 cord_individual_obj[indivial_i,:] = [ 9. 4. 68. 72.]
380 cord_individual_obj[indivial_i,:] = [10. 4. 74. 78.]
381 cord_individual_obj[indivial_i,:] = [11. 4. 68. 72.]
382 cord_individual_obj[indivial_i,:] = [12. 4. 74. 78.]
383 cord_individual_obj[indivial_i,:] = [13. 4. 74. 78.]
384 cord_individual_obj[indivial_i,:] = [14. 4. 74. 78.]
385 cord_individual_obj[indivial_i,:] = [15. 4. 68. 72.]
386 cord_individual_obj[indivial_i,:] = [16. 4. 72. 76.]
387 cord_individual_obj[indivial_i,:] = [17. 4. 74. 78.]
388 cord_individual_obj[indivial_i,:] = [18. 4. 68. 72.]
389 cord_individual_obj[indivial_i,:] = [19. 4. 74. 78.]
390
391 min(cord_individual_obj[:, 3]) = 16.0
392 historl_G_best_iter[iter, 3] = 16.0
393 Begin iteration:
394
395 iter = 14
396 cord_individual_obj[indivial_i,:] = [ 0. 5. 68. 73.]
397 cord_individual_obj[indivial_i,:] = [ 1. 4. 60. 64.]
398 cord_individual_obj[indivial_i,:] = [ 2. 4. 38. 42.]
399 cord_individual_obj[indivial_i,:] = [ 3. 4. 38. 42.]
400 cord_individual_obj[indivial_i,:] = [ 4. 4. 38. 42.]
401 cord_individual_obj[indivial_i,:] = [ 5. 4. 68. 72.]
402 cord_individual_obj[indivial_i,:] = [ 6. 5. 60. 65.]
403 cord_individual_obj[indivial_i,:] = [ 7. 4. 38. 42.]
404 cord_individual_obj[indivial_i,:] = [ 8. 4. 12. 16.]
405 cord_individual_obj[indivial_i,:] = [ 9. 5. 68. 73.]
406 cord_individual_obj[indivial_i,:] = [10. 5. 38. 43.]
407 cord_individual_obj[indivial_i,:] = [11. 4. 44. 48.]
408 cord_individual_obj[indivial_i,:] = [12. 5. 44. 49.]
409 cord_individual_obj[indivial_i,:] = [13. 4. 60. 64.]
410 cord_individual_obj[indivial_i,:] = [14. 5. 60. 65.]
411 cord_individual_obj[indivial_i,:] = [15. 4. 38. 42.]
412 cord_individual_obj[indivial_i,:] = [16. 4. 38. 42.]
413 cord_individual_obj[indivial_i,:] = [17. 4. 38. 42.]
414 cord_individual_obj[indivial_i,:] = [18. 5. 68. 73.]
415 cord_individual_obj[indivial_i,:] = [19. 4. 60. 64.]

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416
417 min(cord_individual_obj[:, 3]) = 16.0
418 historl_G_best_iter[iter, 3] = 16.0
419 Begin iteration:
420
421 iter = 15
422 cord_individual_obj[indivial_i, :] = [ 0.  4. 12. 16.]
423 cord_individual_obj[indivial_i, :] = [ 1.  4. 68. 72.]
424 cord_individual_obj[indivial_i, :] = [ 2.  4. 60. 64.]
425 cord_individual_obj[indivial_i, :] = [ 3.  4. 38. 42.]
426 cord_individual_obj[indivial_i, :] = [ 4.  4. 44. 48.]
427 cord_individual_obj[indivial_i, :] = [ 5.  4. 68. 72.]
428 cord_individual_obj[indivial_i, :] = [ 6.  5. 60. 65.]
429 cord_individual_obj[indivial_i, :] = [ 7.  4. 60. 64.]
430 cord_individual_obj[indivial_i, :] = [ 8.  4. 74. 78.]
431 cord_individual_obj[indivial_i, :] = [ 9.  4. 68. 72.]
432 cord_individual_obj[indivial_i, :] = [10. 4. 38. 42.]
433 cord_individual_obj[indivial_i, :] = [11. 4. 74. 78.]
434 cord_individual_obj[indivial_i, :] = [12. 4. 68. 72.]
435 cord_individual_obj[indivial_i, :] = [13. 4. 60. 64.]
436 cord_individual_obj[indivial_i, :] = [14. 4. 60. 64.]
437 cord_individual_obj[indivial_i, :] = [15. 4. 38. 42.]
438 cord_individual_obj[indivial_i, :] = [16. 4. 68. 72.]
439 cord_individual_obj[indivial_i, :] = [17. 4. 38. 42.]
440 cord_individual_obj[indivial_i, :] = [18. 4. 68. 72.]
441 cord_individual_obj[indivial_i, :] = [19. 4. 60. 64.]
442
443 min(cord_individual_obj[:, 3]) = 16.0
444 historl_G_best_iter[iter, 3] = 16.0
445 Begin iteration:
446
447 iter = 16
448 cord_individual_obj[indivial_i, :] = [ 0.  5. 62. 67.]
449 cord_individual_obj[indivial_i, :] = [ 1.  6. 32. 38.]
450 cord_individual_obj[indivial_i, :] = [ 2.  4. 12. 16.]
451 cord_individual_obj[indivial_i, :] = [ 3.  4. 14. 18.]
452 cord_individual_obj[indivial_i, :] = [ 4.  4. 12. 16.]
453 cord_individual_obj[indivial_i, :] = [ 5.  4. 24. 28.]
454 cord_individual_obj[indivial_i, :] = [ 6.  6. 12. 18.]
455 cord_individual_obj[indivial_i, :] = [ 7.  4. 56. 60.]
456 cord_individual_obj[indivial_i, :] = [ 8.  4. 12. 16.]
457 cord_individual_obj[indivial_i, :] = [ 9.  5. 44. 49.]
458 cord_individual_obj[indivial_i, :] = [10. 5. 32. 37.]
459 cord_individual_obj[indivial_i, :] = [11. 6. 24. 30.]
460 cord_individual_obj[indivial_i, :] = [12. 5. 12. 17.]
461 cord_individual_obj[indivial_i, :] = [13. 4. 14. 18.]
462 cord_individual_obj[indivial_i, :] = [14. 5. 50. 55.]
463 cord_individual_obj[indivial_i, :] = [15. 4. 38. 42.]
464 cord_individual_obj[indivial_i, :] = [16. 4. 32. 36.]
465 cord_individual_obj[indivial_i, :] = [17. 6. 24. 30.]
466 cord_individual_obj[indivial_i, :] = [18. 6. 8. 14.]
467 cord_individual_obj[indivial_i, :] = [19. 6. 14. 20.]
468
469 min(cord_individual_obj[:, 3]) = 14.0
470 historl_G_best_iter[iter, 3] = 14.0
471 Begin iteration:
472
473 iter = 17
474 cord_individual_obj[indivial_i, :] = [ 0.  6.  8. 14.]
475 cord_individual_obj[indivial_i, :] = [ 1.  5. 58. 63.]
476 cord_individual_obj[indivial_i, :] = [ 2.  4. 52. 56.]
477 cord_individual_obj[indivial_i, :] = [ 3.  5. 52. 57.]
478 cord_individual_obj[indivial_i, :] = [ 4.  5. 52. 57.]
479 cord_individual_obj[indivial_i, :] = [ 5.  5. 58. 63.]
480 cord_individual_obj[indivial_i, :] = [ 6.  5. 52. 57.]
481 cord_individual_obj[indivial_i, :] = [ 7.  5. 78. 83.]
482 cord_individual_obj[indivial_i, :] = [ 8.  4. 52. 56.]
483 cord_individual_obj[indivial_i, :] = [ 9.  5. 58. 63.]
484 cord_individual_obj[indivial_i, :] = [10. 6. 60. 66.]
485 cord_individual_obj[indivial_i, :] = [11. 6. 58. 64.]
486 cord_individual_obj[indivial_i, :] = [12. 4. 52. 56.]
487 cord_individual_obj[indivial_i, :] = [13. 4. 52. 56.]
488 cord_individual_obj[indivial_i, :] = [14. 4. 108. 112.]
489 cord_individual_obj[indivial_i, :] = [15. 5. 90. 95.]
490 cord_individual_obj[indivial_i, :] = [16. 6. 68. 74.]
491 cord_individual_obj[indivial_i, :] = [17. 6. 52. 58.]
492 cord_individual_obj[indivial_i, :] = [18. 5. 68. 73.]
493 cord_individual_obj[indivial_i, :] = [19. 4. 52. 56.]
494
495 min(cord_individual_obj[:, 3]) = 14.0
496 historl_G_best_iter[iter, 3] = 14.0
497 Begin iteration:
498
499 iter = 18

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500 cord_individual_obj[indivial_i,:] = [ 0.  4. 108. 112.]
501 cord_individual_obj[indivial_i,:] = [ 1.  6. 12. 18.]
502 cord_individual_obj[indivial_i,:] = [ 2.  5. 12. 17.]
503 cord_individual_obj[indivial_i,:] = [ 3.  5. 12. 17.]
504 cord_individual_obj[indivial_i,:] = [ 4.  5. 24. 29.]
505 cord_individual_obj[indivial_i,:] = [ 5.  5. 24. 29.]
506 cord_individual_obj[indivial_i,:] = [ 6.  6. 12. 18.]
507 cord_individual_obj[indivial_i,:] = [ 7.  5. 24. 29.]
508 cord_individual_obj[indivial_i,:] = [ 8.  5. 32. 37.]
509 cord_individual_obj[indivial_i,:] = [ 9.  6. 24. 30.]
510 cord_individual_obj[indivial_i,:] = [10.  5. 12. 17.]
511 cord_individual_obj[indivial_i,:] = [11.  6. 24. 30.]
512 cord_individual_obj[indivial_i,:] = [12.  6. 24. 30.]
513 cord_individual_obj[indivial_i,:] = [13.  5. 32. 37.]
514 cord_individual_obj[indivial_i,:] = [14.  6. 8. 14.]
515 cord_individual_obj[indivial_i,:] = [15.  5. 32. 37.]
516 cord_individual_obj[indivial_i,:] = [16.  6. 12. 18.]
517 cord_individual_obj[indivial_i,:] = [17.  5. 24. 29.]
518 cord_individual_obj[indivial_i,:] = [18.  6. 24. 30.]
519 cord_individual_obj[indivial_i,:] = [19.  6. 52. 58.]
520
521 min(cord_individual_obj[:,3]) = 14.0
522 historl_G_best_iter[iter,3] = 14.0
523 Begin iteration:
524
525 iter = 19
526 cord_individual_obj[indivial_i,:] = [ 0.  6. 8. 14.]
527 cord_individual_obj[indivial_i,:] = [ 1.  6. 52. 58.]
528 cord_individual_obj[indivial_i,:] = [ 2.  6. 52. 58.]
529 cord_individual_obj[indivial_i,:] = [ 3.  6. 52. 58.]
530 cord_individual_obj[indivial_i,:] = [ 4.  5. 52. 57.]
531 cord_individual_obj[indivial_i,:] = [ 5.  6. 58. 64.]
532 cord_individual_obj[indivial_i,:] = [ 6.  5. 52. 57.]
533 cord_individual_obj[indivial_i,:] = [ 7.  5. 52. 57.]
534 cord_individual_obj[indivial_i,:] = [ 8.  5. 24. 29.]
535 cord_individual_obj[indivial_i,:] = [ 9.  6. 60. 66.]
536 cord_individual_obj[indivial_i,:] = [10.  5. 68. 73.]
537 cord_individual_obj[indivial_i,:] = [11.  6. 52. 58.]
538 cord_individual_obj[indivial_i,:] = [12.  4. 52. 56.]
539 cord_individual_obj[indivial_i,:] = [13.  5. 52. 57.]
540 cord_individual_obj[indivial_i,:] = [14.  6. 68. 74.]
541 cord_individual_obj[indivial_i,:] = [15.  5. 82. 87.]
542 cord_individual_obj[indivial_i,:] = [16.  6. 82. 88.]
543 cord_individual_obj[indivial_i,:] = [17.  6. 52. 58.]
544 cord_individual_obj[indivial_i,:] = [18.  4. 78. 82.]
545 cord_individual_obj[indivial_i,:] = [19.  5. 52. 57.]
546
547 min(cord_individual_obj[:,3]) = 14.0
548 historl_G_best_iter[iter,3] = 14.0
549 Begin iteration:
550
551 iter = 20
552 cord_individual_obj[indivial_i,:] = [ 0.  5. 68. 73.]
553 cord_individual_obj[indivial_i,:] = [ 1.  5. 50. 55.]
554 cord_individual_obj[indivial_i,:] = [ 2.  6. 12. 18.]
555 cord_individual_obj[indivial_i,:] = [ 3.  6. 24. 30.]
556 cord_individual_obj[indivial_i,:] = [ 4.  6. 24. 30.]
557 cord_individual_obj[indivial_i,:] = [ 5.  6. 24. 30.]
558 cord_individual_obj[indivial_i,:] = [ 6.  6. 12. 18.]
559 cord_individual_obj[indivial_i,:] = [ 7.  5. 50. 55.]
560 cord_individual_obj[indivial_i,:] = [ 8.  6. 94. 100.]
561 cord_individual_obj[indivial_i,:] = [ 9.  6. 34. 40.]
562 cord_individual_obj[indivial_i,:] = [10.  5. 32. 37.]
563 cord_individual_obj[indivial_i,:] = [11.  5. 48. 53.]
564 cord_individual_obj[indivial_i,:] = [12.  6. 24. 30.]
565 cord_individual_obj[indivial_i,:] = [13.  5. 24. 29.]
566 cord_individual_obj[indivial_i,:] = [14.  5. 24. 29.]
567 cord_individual_obj[indivial_i,:] = [15.  6. 32. 38.]
568 cord_individual_obj[indivial_i,:] = [16.  6. 8. 14.]
569 cord_individual_obj[indivial_i,:] = [17.  6. 24. 30.]
570 cord_individual_obj[indivial_i,:] = [18.  5. 24. 29.]
571 cord_individual_obj[indivial_i,:] = [19.  5. 32. 37.]
572
573 min(cord_individual_obj[:,3]) = 14.0
574 historl_G_best_iter[iter,3] = 14.0
575 Begin iteration:
576
577 iter = 21
578 cord_individual_obj[indivial_i,:] = [ 0.  6. 52. 58.]
579 cord_individual_obj[indivial_i,:] = [ 1.  5. 58. 63.]
580 cord_individual_obj[indivial_i,:] = [ 2.  6. 52. 58.]
581 cord_individual_obj[indivial_i,:] = [ 3.  6. 24. 30.]
582 cord_individual_obj[indivial_i,:] = [ 4.  6. 52. 58.]
583 cord_individual_obj[indivial_i,:] = [ 5.  6. 58. 64.]

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584 cord_individual_obj[indivial_i,:] = [ 6. 5. 52. 57.]
585 cord_individual_obj[indivial_i,:] = [ 7. 5. 52. 57.]
586 cord_individual_obj[indivial_i,:] = [ 8. 6. 8. 14.]
587 cord_individual_obj[indivial_i,:] = [ 9. 6. 86. 92.]
588 cord_individual_obj[indivial_i,:] = [10. 5. 60. 65.]
589 cord_individual_obj[indivial_i,:] = [11. 5. 68. 73.]
590 cord_individual_obj[indivial_i,:] = [12. 6. 52. 58.]
591 cord_individual_obj[indivial_i,:] = [13. 5. 52. 57.]
592 cord_individual_obj[indivial_i,:] = [14. 4. 52. 56.]
593 cord_individual_obj[indivial_i,:] = [15. 6. 82. 88.]
594 cord_individual_obj[indivial_i,:] = [16. 6. 38. 44.]
595 cord_individual_obj[indivial_i,:] = [17. 5. 52. 57.]
596 cord_individual_obj[indivial_i,:] = [18. 4. 58. 62.]
597 cord_individual_obj[indivial_i,:] = [19. 5. 52. 57.]
598
599 min(cord_individual_obj[:,3]) = 14.0
600 historl_G_best_iter[iter,3] = 14.0
601 Begin iteration:
602
603 iter = 22
604 cord_individual_obj[indivial_i,:] = [ 0. 4. 52. 56.]
605 cord_individual_obj[indivial_i,:] = [ 1. 6. 52. 58.]
606 cord_individual_obj[indivial_i,:] = [ 2. 6. 24. 30.]
607 cord_individual_obj[indivial_i,:] = [ 3. 6. 38. 44.]
608 cord_individual_obj[indivial_i,:] = [ 4. 5. 38. 43.]
609 cord_individual_obj[indivial_i,:] = [ 5. 6. 68. 74.]
610 cord_individual_obj[indivial_i,:] = [ 6. 6. 24. 30.]
611 cord_individual_obj[indivial_i,:] = [ 7. 6. 38. 44.]
612 cord_individual_obj[indivial_i,:] = [ 8. 6. 58. 64.]
613 cord_individual_obj[indivial_i,:] = [ 9. 6. 8. 14.]
614 cord_individual_obj[indivial_i,:] = [10. 6. 38. 44.]
615 cord_individual_obj[indivial_i,:] = [11. 5. 38. 43.]
616 cord_individual_obj[indivial_i,:] = [12. 4. 38. 42.]
617 cord_individual_obj[indivial_i,:] = [13. 6. 52. 58.]
618 cord_individual_obj[indivial_i,:] = [14. 6. 58. 64.]
619 cord_individual_obj[indivial_i,:] = [15. 6. 24. 30.]
620 cord_individual_obj[indivial_i,:] = [16. 6. 38. 44.]
621 cord_individual_obj[indivial_i,:] = [17. 5. 38. 43.]
622 cord_individual_obj[indivial_i,:] = [18. 5. 68. 73.]
623 cord_individual_obj[indivial_i,:] = [19. 5. 52. 57.]
624
625 min(cord_individual_obj[:,3]) = 14.0
626 historl_G_best_iter[iter,3] = 14.0
627 Begin iteration:
628
629 iter = 23
630 cord_individual_obj[indivial_i,:] = [ 0. 6. 8. 14.]
631 cord_individual_obj[indivial_i,:] = [ 1. 5. 70. 75.]
632 cord_individual_obj[indivial_i,:] = [ 2. 6. 8. 14.]
633 cord_individual_obj[indivial_i,:] = [ 3. 6. 8. 14.]
634 cord_individual_obj[indivial_i,:] = [ 4. 5. 8. 13.]
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. 6. 8. 14.]
638 cord_individual_obj[indivial_i,:] = [ 8. 6. 8. 14.]
639 cord_individual_obj[indivial_i,:] = [ 9. 6. 58. 64.]
640 cord_individual_obj[indivial_i,:] = [10. 4. 96. 100.]
641 cord_individual_obj[indivial_i,:] = [11. 5. 22. 27.]
642 cord_individual_obj[indivial_i,:] = [12. 5. 22. 27.]
643 cord_individual_obj[indivial_i,:] = [13. 6. 8. 14.]
644 cord_individual_obj[indivial_i,:] = [14. 5. 22. 27.]
645 cord_individual_obj[indivial_i,:] = [15. 6. 62. 68.]
646 cord_individual_obj[indivial_i,:] = [16. 6. 8. 14.]
647 cord_individual_obj[indivial_i,:] = [17. 5. 22. 27.]
648 cord_individual_obj[indivial_i,:] = [18. 4. 34. 38.]
649 cord_individual_obj[indivial_i,:] = [19. 6. 8. 14.]
650
651 min(cord_individual_obj[:,3]) = 13.0
652 historl_G_best_iter[iter,3] = 13.0
653 Begin iteration:
654
655 iter = 24
656 cord_individual_obj[indivial_i,:] = [ 0. 6. 38. 44.]
657 cord_individual_obj[indivial_i,:] = [ 1. 5. 38. 43.]
658 cord_individual_obj[indivial_i,:] = [ 2. 6. 28. 34.]
659 cord_individual_obj[indivial_i,:] = [ 3. 6. 38. 44.]
660 cord_individual_obj[indivial_i,:] = [ 4. 6. 52. 58.]
661 cord_individual_obj[indivial_i,:] = [ 5. 5. 38. 43.]
662 cord_individual_obj[indivial_i,:] = [ 6. 6. 38. 44.]
663 cord_individual_obj[indivial_i,:] = [ 7. 6. 28. 34.]
664 cord_individual_obj[indivial_i,:] = [ 8. 6. 38. 44.]
665 cord_individual_obj[indivial_i,:] = [ 9. 6. 24. 30.]
666 cord_individual_obj[indivial_i,:] = [10. 5. 8. 13.]
667 cord_individual_obj[indivial_i,:] = [11. 6. 28. 34.]

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668 cord_individual_obj[indivial_i,:] = [12. 6. 52. 58.]
669 cord_individual_obj[indivial_i,:] = [13. 6. 38. 44.]
670 cord_individual_obj[indivial_i,:] = [14. 6. 38. 44.]
671 cord_individual_obj[indivial_i,:] = [15. 6. 58. 64.]
672 cord_individual_obj[indivial_i,:] = [16. 6. 28. 34.]
673 cord_individual_obj[indivial_i,:] = [17. 6. 38. 44.]
674 cord_individual_obj[indivial_i,:] = [18. 6. 38. 44.]
675 cord_individual_obj[indivial_i,:] = [19. 6. 38. 44.]
676
677 min(cord_individual_obj[:,3]) = 13.0
678 historl_G_best_iter[iter,3] = 13.0
679 Begin iteration:
680
681 iter = 25
682 cord_individual_obj[indivial_i,:] = [ 0. 6. 24. 30.]
683 cord_individual_obj[indivial_i,:] = [ 1. 6. 24. 30.]
684 cord_individual_obj[indivial_i,:] = [ 2. 6. 12. 18.]
685 cord_individual_obj[indivial_i,:] = [ 3. 6. 8. 14.]
686 cord_individual_obj[indivial_i,:] = [ 4. 6. 24. 30.]
687 cord_individual_obj[indivial_i,:] = [ 5. 5. 24. 29.]
688 cord_individual_obj[indivial_i,:] = [ 6. 5. 48. 53.]
689 cord_individual_obj[indivial_i,:] = [ 7. 6. 26. 32.]
690 cord_individual_obj[indivial_i,:] = [ 8. 6. 24. 30.]
691 cord_individual_obj[indivial_i,:] = [ 9. 6. 16. 22.]
692 cord_individual_obj[indivial_i,:] = [10. 6. 28. 34.]
693 cord_individual_obj[indivial_i,:] = [11. 6. 68. 74.]
694 cord_individual_obj[indivial_i,:] = [12. 6. 24. 30.]
695 cord_individual_obj[indivial_i,:] = [13. 6. 24. 30.]
696 cord_individual_obj[indivial_i,:] = [14. 6. 24. 30.]
697 cord_individual_obj[indivial_i,:] = [15. 5. 8. 13.]
698 cord_individual_obj[indivial_i,:] = [16. 6. 12. 18.]
699 cord_individual_obj[indivial_i,:] = [17. 5. 68. 73.]
700 cord_individual_obj[indivial_i,:] = [18. 6. 52. 58.]
701 cord_individual_obj[indivial_i,:] = [19. 6. 8. 14.]
702
703 min(cord_individual_obj[:,3]) = 13.0
704 historl_G_best_iter[iter,3] = 13.0
705 Begin iteration:
706
707 iter = 26
708 cord_individual_obj[indivial_i,:] = [ 0. 6. 28. 34.]
709 cord_individual_obj[indivial_i,:] = [ 1. 6. 38. 44.]
710 cord_individual_obj[indivial_i,:] = [ 2. 5. 28. 33.]
711 cord_individual_obj[indivial_i,:] = [ 3. 5. 38. 43.]
712 cord_individual_obj[indivial_i,:] = [ 4. 6. 38. 44.]
713 cord_individual_obj[indivial_i,:] = [ 5. 5. 28. 33.]
714 cord_individual_obj[indivial_i,:] = [ 6. 6. 28. 34.]
715 cord_individual_obj[indivial_i,:] = [ 7. 5. 38. 43.]
716 cord_individual_obj[indivial_i,:] = [ 8. 5. 28. 33.]
717 cord_individual_obj[indivial_i,:] = [ 9. 5. 28. 33.]
718 cord_individual_obj[indivial_i,:] = [10. 4. 38. 42.]
719 cord_individual_obj[indivial_i,:] = [11. 5. 8. 13.]
720 cord_individual_obj[indivial_i,:] = [12. 6. 38. 44.]
721 cord_individual_obj[indivial_i,:] = [13. 5. 28. 33.]
722 cord_individual_obj[indivial_i,:] = [14. 4. 28. 32.]
723 cord_individual_obj[indivial_i,:] = [15. 5. 28. 33.]
724 cord_individual_obj[indivial_i,:] = [16. 5. 28. 33.]
725 cord_individual_obj[indivial_i,:] = [17. 6. 52. 58.]
726 cord_individual_obj[indivial_i,:] = [18. 6. 28. 34.]
727 cord_individual_obj[indivial_i,:] = [19. 6. 28. 34.]
728
729 min(cord_individual_obj[:,3]) = 13.0
730 historl_G_best_iter[iter,3] = 13.0
731 Begin iteration:
732
733 iter = 27
734 cord_individual_obj[indivial_i,:] = [ 0. 6. 28. 34.]
735 cord_individual_obj[indivial_i,:] = [ 1. 6. 28. 34.]
736 cord_individual_obj[indivial_i,:] = [ 2. 5. 38. 43.]
737 cord_individual_obj[indivial_i,:] = [ 3. 5. 28. 33.]
738 cord_individual_obj[indivial_i,:] = [ 4. 6. 28. 34.]
739 cord_individual_obj[indivial_i,:] = [ 5. 5. 38. 43.]
740 cord_individual_obj[indivial_i,:] = [ 6. 6. 28. 34.]
741 cord_individual_obj[indivial_i,:] = [ 7. 5. 38. 43.]
742 cord_individual_obj[indivial_i,:] = [ 8. 5. 28. 33.]
743 cord_individual_obj[indivial_i,:] = [ 9. 5. 28. 33.]
744 cord_individual_obj[indivial_i,:] = [10. 6. 68. 74.]
745 cord_individual_obj[indivial_i,:] = [11. 6. 28. 34.]
746 cord_individual_obj[indivial_i,:] = [12. 6. 52. 58.]
747 cord_individual_obj[indivial_i,:] = [13. 5. 28. 33.]
748 cord_individual_obj[indivial_i,:] = [14. 6. 28. 34.]
749 cord_individual_obj[indivial_i,:] = [15. 5. 58. 63.]
750 cord_individual_obj[indivial_i,:] = [16. 5. 68. 73.]
751 cord_individual_obj[indivial_i,:] = [17. 5. 8. 13.]

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```

752     cord_individual_obj[indivial_i, :] = [18. 6. 28. 34.]
753     cord_individual_obj[indivial_i, :] = [19. 6. 28. 34.]
754
755     min(cord_individual_obj[:, 3]) = 13.0
756     historl_G_best_iter[iter, 3] = 13.0
757 Begin iteration:
758
759 iter = 28
760     cord_individual_obj[indivial_i, :] = [ 0. 6. 28. 34.]
761     cord_individual_obj[indivial_i, :] = [ 1. 6. 24. 30.]
762     cord_individual_obj[indivial_i, :] = [ 2. 5. 24. 29.]
763     cord_individual_obj[indivial_i, :] = [ 3. 5. 28. 33.]
764     cord_individual_obj[indivial_i, :] = [ 4. 6. 52. 58.]
765     cord_individual_obj[indivial_i, :] = [ 5. 5. 28. 33.]
766     cord_individual_obj[indivial_i, :] = [ 6. 6. 24. 30.]
767     cord_individual_obj[indivial_i, :] = [ 7. 5. 28. 33.]
768     cord_individual_obj[indivial_i, :] = [ 8. 5. 28. 33.]
769     cord_individual_obj[indivial_i, :] = [ 9. 4. 34. 38.]
770     cord_individual_obj[indivial_i, :] = [10. 5. 8. 13.]
771     cord_individual_obj[indivial_i, :] = [11. 6. 28. 34.]
772     cord_individual_obj[indivial_i, :] = [12. 6. 28. 34.]
773     cord_individual_obj[indivial_i, :] = [13. 5. 32. 37.]
774     cord_individual_obj[indivial_i, :] = [14. 6. 64. 70.]
775     cord_individual_obj[indivial_i, :] = [15. 5. 24. 29.]
776     cord_individual_obj[indivial_i, :] = [16. 5. 24. 29.]
777     cord_individual_obj[indivial_i, :] = [17. 6. 38. 44.]
778     cord_individual_obj[indivial_i, :] = [18. 6. 28. 34.]
779     cord_individual_obj[indivial_i, :] = [19. 6. 28. 34.]
780
781     min(cord_individual_obj[:, 3]) = 13.0
782     historl_G_best_iter[iter, 3] = 13.0
783 Begin iteration:
784
785 iter = 29
786     cord_individual_obj[indivial_i, :] = [ 0. 6. 28. 34.]
787     cord_individual_obj[indivial_i, :] = [ 1. 6. 28. 34.]
788     cord_individual_obj[indivial_i, :] = [ 2. 5. 52. 57.]
789     cord_individual_obj[indivial_i, :] = [ 3. 5. 42. 47.]
790     cord_individual_obj[indivial_i, :] = [ 4. 6. 28. 34.]
791     cord_individual_obj[indivial_i, :] = [ 5. 5. 28. 33.]
792     cord_individual_obj[indivial_i, :] = [ 6. 6. 28. 34.]
793     cord_individual_obj[indivial_i, :] = [ 7. 5. 32. 37.]
794     cord_individual_obj[indivial_i, :] = [ 8. 5. 28. 33.]
795     cord_individual_obj[indivial_i, :] = [ 9. 5. 20. 25.]
796     cord_individual_obj[indivial_i, :] = [10. 6. 82. 88.]
797     cord_individual_obj[indivial_i, :] = [11. 6. 42. 48.]
798     cord_individual_obj[indivial_i, :] = [12. 6. 52. 58.]
799     cord_individual_obj[indivial_i, :] = [13. 5. 28. 33.]
800     cord_individual_obj[indivial_i, :] = [14. 5. 8. 13.]
801     cord_individual_obj[indivial_i, :] = [15. 5. 28. 33.]
802     cord_individual_obj[indivial_i, :] = [16. 5. 28. 33.]
803     cord_individual_obj[indivial_i, :] = [17. 6. 28. 34.]
804     cord_individual_obj[indivial_i, :] = [18. 6. 24. 30.]
805     cord_individual_obj[indivial_i, :] = [19. 6. 28. 34.]
806
807     min(cord_individual_obj[:, 3]) = 13.0
808     historl_G_best_iter[iter, 3] = 13.0
809 Begin iteration:
810
811 iter = 30
812     cord_individual_obj[indivial_i, :] = [ 0. 6. 28. 34.]
813     cord_individual_obj[indivial_i, :] = [ 1. 6. 24. 30.]
814     cord_individual_obj[indivial_i, :] = [ 2. 5. 24. 29.]
815     cord_individual_obj[indivial_i, :] = [ 3. 5. 28. 33.]
816     cord_individual_obj[indivial_i, :] = [ 4. 6. 28. 34.]
817     cord_individual_obj[indivial_i, :] = [ 5. 5. 28. 33.]
818     cord_individual_obj[indivial_i, :] = [ 6. 6. 24. 30.]
819     cord_individual_obj[indivial_i, :] = [ 7. 5. 28. 33.]
820     cord_individual_obj[indivial_i, :] = [ 8. 5. 38. 43.]
821     cord_individual_obj[indivial_i, :] = [ 9. 5. 38. 43.]
822     cord_individual_obj[indivial_i, :] = [10. 5. 8. 13.]
823     cord_individual_obj[indivial_i, :] = [11. 6. 28. 34.]
824     cord_individual_obj[indivial_i, :] = [12. 6. 28. 34.]
825     cord_individual_obj[indivial_i, :] = [13. 5. 28. 33.]
826     cord_individual_obj[indivial_i, :] = [14. 6. 28. 34.]
827     cord_individual_obj[indivial_i, :] = [15. 5. 42. 47.]
828     cord_individual_obj[indivial_i, :] = [16. 5. 38. 43.]
829     cord_individual_obj[indivial_i, :] = [17. 6. 38. 44.]
830     cord_individual_obj[indivial_i, :] = [18. 6. 28. 34.]
831     cord_individual_obj[indivial_i, :] = [19. 6. 28. 34.]
832
833     min(cord_individual_obj[:, 3]) = 13.0
834     historl_G_best_iter[iter, 3] = 13.0
835 Iteration calculate over

```

```

836
837
838
839
840 All item are in Bin and:
841   Bin area = 1080
842   Real_area = 119.0
843   Proportion_of_area = 0.11018518518518519
844   BEST_CHROM =
845     berth: [ 2.5 26. 13. 7.5 17.5 21. ]
846     time: [0. 0. 0. 0. 0. 0.]
847     num_QC: [2. 2. 3. 2. 2. 2.]
848 Objective function values and some other indicators:
849   Obj0 = 5.00      Obj1 = 8.00      Obj0 + Obj1 = 13.00
850 Total movement of crane: 8.00
851 Total waiting time in berth position: 0.00
852 Total index of q during berthing: 674.00
853 Specific arrangement for each vessel:
854   V_id: 0           li: 5.0          xi: 2.5          bow of i: 0.0          tail of i: 5.0          gama_i0: 0.0          gama_i1: 1.0
855   .0               gama_i1 + 1: 2.0    gama_i1 - gama_i0: 1.0    duration_time_i: 2.0    demand_i: 80.0        work load_i:
856   80.0             work load gap_i: 0
855   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
856   .0               gama_i1 + 1: 3.0    gama_i1 - gama_i0: 2.0    duration_time_i: 3.0    demand_i: 120.0       work
856   load_i: 120.0
856   V_id: 2           li: 6.0          xi: 13.0          bow of i: 10.0         tail of i: 16.0         gama_i0: 0.0          gama_i1: 4
856   .0               gama_i1 + 1: 5.0    gama_i1 - gama_i0: 4.0    duration_time_i: 5.0    demand_i: 260.0       work
856   load_i: 260.0
857   V_id: 3           li: 5.0          xi: 7.5           bow of i: 5.0          tail of i: 10.0         gama_i0: 0.0          gama_i1: 1.0
857   .0               gama_i1 + 1: 2.0    gama_i1 - gama_i0: 1.0    duration_time_i: 2.0    demand_i: 80.0        work load_i:
858   80.0             work load gap_i: 0
858   V_id: 4           li: 3.0          xi: 17.5          bow of i: 16.0         tail of i: 19.0         gama_i0: 0.0          gama_i1: 4
858   .0               gama_i1 + 1: 5.0    gama_i1 - gama_i0: 4.0    duration_time_i: 5.0    demand_i: 200.0       work
858   load_i: 200.0
859   V_id: 5           li: 4.0           xi: 21.0          bow of i: 19.0         tail of i: 23.0         gama_i0: 0.0          gama_i1: 5
859   .0               gama_i1 + 1: 6.0    gama_i1 - gama_i0: 5.0    duration_time_i: 6.0    demand_i: 220.0       work
859   load_i: 220.0
860
861 Algorithm finished and the total CPU time: 712 s
862 End
863

```