

unknown

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80 iter = 3
81 cord_individual_obj[indivial_i, :] = [ 0. 5. 8. 13.]
82 cord_individual_obj[indivial_i, :] = [ 1. 5. 38. 43.]
83 cord_individual_obj[indivial_i, :] = [ 2. 5. 54. 59.]
84 cord_individual_obj[indivial_i, :] = [ 3. 5. 32. 37.]
85 cord_individual_obj[indivial_i, :] = [ 4. 4. 90. 94.]
86 cord_individual_obj[indivial_i, :] = [ 5. 5. 80. 85.]
87 cord_individual_obj[indivial_i, :] = [ 6. 5. 68. 73.]
88 cord_individual_obj[indivial_i, :] = [ 7. 4. 38. 42.]
89 cord_individual_obj[indivial_i, :] = [ 8. 5. 96. 101.]
90 cord_individual_obj[indivial_i, :] = [ 9. 5. 8. 13.]
91
92 min(cord_individual_obj[:, 3]) = 13.0
93 historl_G_best_iter[iter, 3] = 13.0
94 Begin iteration:
95
96 iter = 4
97 cord_individual_obj[indivial_i, :] = [ 0. 5. 144. 149.]
98 cord_individual_obj[indivial_i, :] = [ 1. 3. 108. 111.]
99 cord_individual_obj[indivial_i, :] = [ 2. 5. 80. 85.]
100 cord_individual_obj[indivial_i, :] = [ 3. 5. 34. 39.]
101 cord_individual_obj[indivial_i, :] = [ 4. 5. 92. 97.]
102 cord_individual_obj[indivial_i, :] = [ 5. 3. 48. 51.]
103 cord_individual_obj[indivial_i, :] = [ 6. 5. 76. 81.]
104 cord_individual_obj[indivial_i, :] = [ 7. 5. 24. 29.]
105 cord_individual_obj[indivial_i, :] = [ 8. 5. 8. 13.]
106 cord_individual_obj[indivial_i, :] = [ 9. 5. 34. 39.]
107
108 min(cord_individual_obj[:, 3]) = 13.0
109 historl_G_best_iter[iter, 3] = 13.0
110 Begin iteration:
111
112 iter = 5
113 cord_individual_obj[indivial_i, :] = [ 0. 5. 8. 13.]
114 cord_individual_obj[indivial_i, :] = [ 1. 4. 134. 138.]
115 cord_individual_obj[indivial_i, :] = [ 2. 5. 58. 63.]
116 cord_individual_obj[indivial_i, :] = [ 3. 5. 56. 61.]
117 cord_individual_obj[indivial_i, :] = [ 4. 4. 124. 128.]
118 cord_individual_obj[indivial_i, :] = [ 5. 5. 32. 37.]
119 cord_individual_obj[indivial_i, :] = [ 6. 5. 36. 41.]
120 cord_individual_obj[indivial_i, :] = [ 7. 5. 68. 73.]
121 cord_individual_obj[indivial_i, :] = [ 8. 5. 80. 85.]
122 cord_individual_obj[indivial_i, :] = [ 9. 5. 124. 129.]
123
124 min(cord_individual_obj[:, 3]) = 13.0
125 historl_G_best_iter[iter, 3] = 13.0
126 Begin iteration:
127
128 iter = 6
129 cord_individual_obj[indivial_i, :] = [ 0. 5. 80. 85.]
130 cord_individual_obj[indivial_i, :] = [ 1. 5. 8. 13.]
131 cord_individual_obj[indivial_i, :] = [ 2. 5. 54. 59.]
132 cord_individual_obj[indivial_i, :] = [ 3. 5. 110. 115.]
133 cord_individual_obj[indivial_i, :] = [ 4. 5. 60. 65.]
134 cord_individual_obj[indivial_i, :] = [ 5. 3. 80. 83.]
135 cord_individual_obj[indivial_i, :] = [ 6. 5. 32. 37.]
136 cord_individual_obj[indivial_i, :] = [ 7. 5. 92. 97.]
137 cord_individual_obj[indivial_i, :] = [ 8. 5. 116. 121.]
138 cord_individual_obj[indivial_i, :] = [ 9. 5. 130. 135.]
139
140 min(cord_individual_obj[:, 3]) = 13.0
141 historl_G_best_iter[iter, 3] = 13.0
142 Begin iteration:
143
144 iter = 7
145 cord_individual_obj[indivial_i, :] = [ 0. 5. 96. 101.]
146 cord_individual_obj[indivial_i, :] = [ 1. 4. 54. 58.]
147 cord_individual_obj[indivial_i, :] = [ 2. 5. 54. 59.]
148 cord_individual_obj[indivial_i, :] = [ 3. 5. 80. 85.]
149 cord_individual_obj[indivial_i, :] = [ 4. 4. 80. 84.]
150 cord_individual_obj[indivial_i, :] = [ 5. 3. 80. 83.]
151 cord_individual_obj[indivial_i, :] = [ 6. 5. 80. 85.]
152 cord_individual_obj[indivial_i, :] = [ 7. 4. 54. 58.]
153 cord_individual_obj[indivial_i, :] = [ 8. 5. 180. 185.]
154 cord_individual_obj[indivial_i, :] = [ 9. 5. 8. 13.]
155
156 min(cord_individual_obj[:, 3]) = 13.0
157 historl_G_best_iter[iter, 3] = 13.0
158 Begin iteration:
159
160 iter = 8
161 cord_individual_obj[indivial_i, :] = [ 0. 5. 144. 149.]
162 cord_individual_obj[indivial_i, :] = [ 1. 5. 80. 85.]
163 cord_individual_obj[indivial_i, :] = [ 2. 5. 32. 37.]

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164 cord_individual_obj[indivial_i, :] = [ 3. 5. 136. 141.]
165 cord_individual_obj[indivial_i, :] = [ 4. 3. 96. 99.]
166 cord_individual_obj[indivial_i, :] = [ 5. 3. 96. 99.]
167 cord_individual_obj[indivial_i, :] = [ 6. 5. 96. 101.]
168 cord_individual_obj[indivial_i, :] = [ 7. 5. 164. 169.]
169 cord_individual_obj[indivial_i, :] = [ 8. 5. 8. 13.]
170 cord_individual_obj[indivial_i, :] = [ 9. 5. 80. 85.]
171
172 min(cord_individual_obj[:, 3]) = 13.0
173 historl_G_best_iter[iter, 3] = 13.0
174 Begin iteration:
175
176 iter = 9
177 cord_individual_obj[indivial_i, :] = [ 0. 5. 108. 113.]
178 cord_individual_obj[indivial_i, :] = [ 1. 4. 54. 58.]
179 cord_individual_obj[indivial_i, :] = [ 2. 5. 58. 63.]
180 cord_individual_obj[indivial_i, :] = [ 3. 5. 74. 79.]
181 cord_individual_obj[indivial_i, :] = [ 4. 5. 84. 89.]
182 cord_individual_obj[indivial_i, :] = [ 5. 3. 114. 117.]
183 cord_individual_obj[indivial_i, :] = [ 6. 5. 88. 93.]
184 cord_individual_obj[indivial_i, :] = [ 7. 5. 8. 13.]
185 cord_individual_obj[indivial_i, :] = [ 8. 5. 146. 151.]
186 cord_individual_obj[indivial_i, :] = [ 9. 5. 24. 29.]
187
188 min(cord_individual_obj[:, 3]) = 13.0
189 historl_G_best_iter[iter, 3] = 13.0
190 Begin iteration:
191
192 iter = 10
193 cord_individual_obj[indivial_i, :] = [ 0. 5. 172. 177.]
194 cord_individual_obj[indivial_i, :] = [ 1. 5. 54. 59.]
195 cord_individual_obj[indivial_i, :] = [ 2. 5. 54. 59.]
196 cord_individual_obj[indivial_i, :] = [ 3. 5. 80. 85.]
197 cord_individual_obj[indivial_i, :] = [ 4. 4. 80. 84.]
198 cord_individual_obj[indivial_i, :] = [ 5. 5. 96. 101.]
199 cord_individual_obj[indivial_i, :] = [ 6. 5. 96. 101.]
200 cord_individual_obj[indivial_i, :] = [ 7. 4. 118. 122.]
201 cord_individual_obj[indivial_i, :] = [ 8. 5. 8. 13.]
202 cord_individual_obj[indivial_i, :] = [ 9. 5. 54. 59.]
203
204 min(cord_individual_obj[:, 3]) = 13.0
205 historl_G_best_iter[iter, 3] = 13.0
206 Begin iteration:
207
208 iter = 11
209 cord_individual_obj[indivial_i, :] = [ 0. 5. 8. 13.]
210 cord_individual_obj[indivial_i, :] = [ 1. 4. 54. 58.]
211 cord_individual_obj[indivial_i, :] = [ 2. 5. 54. 59.]
212 cord_individual_obj[indivial_i, :] = [ 3. 5. 62. 67.]
213 cord_individual_obj[indivial_i, :] = [ 4. 5. 80. 85.]
214 cord_individual_obj[indivial_i, :] = [ 5. 5. 80. 85.]
215 cord_individual_obj[indivial_i, :] = [ 6. 5. 80. 85.]
216 cord_individual_obj[indivial_i, :] = [ 7. 4. 54. 58.]
217 cord_individual_obj[indivial_i, :] = [ 8. 5. 80. 85.]
218 cord_individual_obj[indivial_i, :] = [ 9. 5. 134. 139.]
219
220 min(cord_individual_obj[:, 3]) = 13.0
221 historl_G_best_iter[iter, 3] = 13.0
222 Begin iteration:
223
224 iter = 12
225 cord_individual_obj[indivial_i, :] = [ 0. 5. 144. 149.]
226 cord_individual_obj[indivial_i, :] = [ 1. 5. 8. 13.]
227 cord_individual_obj[indivial_i, :] = [ 2. 5. 58. 63.]
228 cord_individual_obj[indivial_i, :] = [ 3. 5. 8. 13.]
229 cord_individual_obj[indivial_i, :] = [ 4. 4. 8. 12.]
230 cord_individual_obj[indivial_i, :] = [ 5. 3. 96. 99.]
231 cord_individual_obj[indivial_i, :] = [ 6. 5. 8. 13.]
232 cord_individual_obj[indivial_i, :] = [ 7. 5. 68. 73.]
233 cord_individual_obj[indivial_i, :] = [ 8. 5. 110. 115.]
234 cord_individual_obj[indivial_i, :] = [ 9. 5. 8. 13.]
235
236 min(cord_individual_obj[:, 3]) = 12.0
237 historl_G_best_iter[iter, 3] = 12.0
238 Begin iteration:
239
240 iter = 13
241 cord_individual_obj[indivial_i, :] = [ 0. 4. 8. 12.]
242 cord_individual_obj[indivial_i, :] = [ 1. 5. 8. 13.]
243 cord_individual_obj[indivial_i, :] = [ 2. 5. 8. 13.]
244 cord_individual_obj[indivial_i, :] = [ 3. 5. 26. 31.]
245 cord_individual_obj[indivial_i, :] = [ 4. 4. 12. 16.]
246 cord_individual_obj[indivial_i, :] = [ 5. 3. 8. 11.]
247 cord_individual_obj[indivial_i, :] = [ 6. 3. 44. 47.]

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248     cord_individual_obj[indivial_i, :] = [ 7. 5. 20. 25.]
249     cord_individual_obj[indivial_i, :] = [ 8. 4. 78. 82.]
250     cord_individual_obj[indivial_i, :] = [ 9. 4. 100. 104.]
251
252 min(cord_individual_obj[:, 3]) = 11.0
253 historl_G_best_iter[iter, 3] = 11.0
254 Begin iteration:
255
256 iter = 14
257     cord_individual_obj[indivial_i, :] = [ 0. 4. 140. 144.]
258     cord_individual_obj[indivial_i, :] = [ 1. 3. 16. 19.]
259     cord_individual_obj[indivial_i, :] = [ 2. 3. 12. 15.]
260     cord_individual_obj[indivial_i, :] = [ 3. 3. 74. 77.]
261     cord_individual_obj[indivial_i, :] = [ 4. 3. 24. 27.]
262     cord_individual_obj[indivial_i, :] = [ 5. 3. 8. 11.]
263     cord_individual_obj[indivial_i, :] = [ 6. 4. 44. 48.]
264     cord_individual_obj[indivial_i, :] = [ 7. 4. 12. 16.]
265     cord_individual_obj[indivial_i, :] = [ 8. 3. 56. 59.]
266     cord_individual_obj[indivial_i, :] = [ 9. 3. 8. 11.]
267
268 min(cord_individual_obj[:, 3]) = 11.0
269 historl_G_best_iter[iter, 3] = 11.0
270 Begin iteration:
271
272 iter = 15
273     cord_individual_obj[indivial_i, :] = [ 0. 3. 8. 11.]
274     cord_individual_obj[indivial_i, :] = [ 1. 5. 8. 13.]
275     cord_individual_obj[indivial_i, :] = [ 2. 5. 20. 25.]
276     cord_individual_obj[indivial_i, :] = [ 3. 5. 28. 33.]
277     cord_individual_obj[indivial_i, :] = [ 4. 5. 24. 29.]
278     cord_individual_obj[indivial_i, :] = [ 5. 5. 8. 13.]
279     cord_individual_obj[indivial_i, :] = [ 6. 5. 20. 25.]
280     cord_individual_obj[indivial_i, :] = [ 7. 5. 88. 93.]
281     cord_individual_obj[indivial_i, :] = [ 8. 5. 50. 55.]
282     cord_individual_obj[indivial_i, :] = [ 9. 5. 112. 117.]
283
284 min(cord_individual_obj[:, 3]) = 11.0
285 historl_G_best_iter[iter, 3] = 11.0
286 Begin iteration:
287
288 iter = 16
289     cord_individual_obj[indivial_i, :] = [ 0. 3. 132. 135.]
290     cord_individual_obj[indivial_i, :] = [ 1. 3. 48. 51.]
291     cord_individual_obj[indivial_i, :] = [ 2. 3. 16. 19.]
292     cord_individual_obj[indivial_i, :] = [ 3. 3. 60. 63.]
293     cord_individual_obj[indivial_i, :] = [ 4. 3. 102. 105.]
294     cord_individual_obj[indivial_i, :] = [ 5. 3. 48. 51.]
295     cord_individual_obj[indivial_i, :] = [ 6. 4. 72. 76.]
296     cord_individual_obj[indivial_i, :] = [ 7. 4. 20. 24.]
297     cord_individual_obj[indivial_i, :] = [ 8. 3. 88. 91.]
298     cord_individual_obj[indivial_i, :] = [ 9. 3. 8. 11.]
299
300 min(cord_individual_obj[:, 3]) = 11.0
301 historl_G_best_iter[iter, 3] = 11.0
302 Begin iteration:
303
304 iter = 17
305     cord_individual_obj[indivial_i, :] = [ 0. 3. 8. 11.]
306     cord_individual_obj[indivial_i, :] = [ 1. 4. 12. 16.]
307     cord_individual_obj[indivial_i, :] = [ 2. 5. 52. 57.]
308     cord_individual_obj[indivial_i, :] = [ 3. 5. 12. 17.]
309     cord_individual_obj[indivial_i, :] = [ 4. 5. 24. 29.]
310     cord_individual_obj[indivial_i, :] = [ 5. 3. 20. 23.]
311     cord_individual_obj[indivial_i, :] = [ 6. 5. 8. 13.]
312     cord_individual_obj[indivial_i, :] = [ 7. 5. 20. 25.]
313     cord_individual_obj[indivial_i, :] = [ 8. 6. 52. 58.]
314     cord_individual_obj[indivial_i, :] = [ 9. 4. 36. 40.]
315
316 min(cord_individual_obj[:, 3]) = 11.0
317 historl_G_best_iter[iter, 3] = 11.0
318 Begin iteration:
319
320 iter = 18
321     cord_individual_obj[indivial_i, :] = [ 0. 3. 132. 135.]
322     cord_individual_obj[indivial_i, :] = [ 1. 5. 20. 25.]
323     cord_individual_obj[indivial_i, :] = [ 2. 5. 62. 67.]
324     cord_individual_obj[indivial_i, :] = [ 3. 5. 144. 149.]
325     cord_individual_obj[indivial_i, :] = [ 4. 3. 72. 75.]
326     cord_individual_obj[indivial_i, :] = [ 5. 3. 44. 47.]
327     cord_individual_obj[indivial_i, :] = [ 6. 5. 80. 85.]
328     cord_individual_obj[indivial_i, :] = [ 7. 4. 32. 36.]
329     cord_individual_obj[indivial_i, :] = [ 8. 3. 8. 11.]
330     cord_individual_obj[indivial_i, :] = [ 9. 3. 24. 27.]
331
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332 min(cord_individual_obj[:, 3]) = 11.0
333 historl_G_best_iter[iter, 3] = 11.0
334 Begin iteration:
335
336 iter = 19
337 cord_individual_obj[indivial_i, :] = [ 0. 3. 58. 61.]
338 cord_individual_obj[indivial_i, :] = [ 1. 4. 8. 12.]
339 cord_individual_obj[indivial_i, :] = [ 2. 3. 8. 11.]
340 cord_individual_obj[indivial_i, :] = [ 3. 3. 8. 11.]
341 cord_individual_obj[indivial_i, :] = [ 4. 5. 12. 17.]
342 cord_individual_obj[indivial_i, :] = [ 5. 5. 50. 55.]
343 cord_individual_obj[indivial_i, :] = [ 6. 4. 24. 28.]
344 cord_individual_obj[indivial_i, :] = [ 7. 6. 100. 106.]
345 cord_individual_obj[indivial_i, :] = [ 8. 4. 100. 104.]
346 cord_individual_obj[indivial_i, :] = [ 9. 4. 18. 22.]
347
348 min(cord_individual_obj[:, 3]) = 11.0
349 historl_G_best_iter[iter, 3] = 11.0
350 Begin iteration:
351
352 iter = 20
353 cord_individual_obj[indivial_i, :] = [ 0. 5. 144. 149.]
354 cord_individual_obj[indivial_i, :] = [ 1. 4. 32. 36.]
355 cord_individual_obj[indivial_i, :] = [ 2. 3. 54. 57.]
356 cord_individual_obj[indivial_i, :] = [ 3. 3. 68. 71.]
357 cord_individual_obj[indivial_i, :] = [ 4. 5. 80. 85.]
358 cord_individual_obj[indivial_i, :] = [ 5. 5. 88. 93.]
359 cord_individual_obj[indivial_i, :] = [ 6. 4. 12. 16.]
360 cord_individual_obj[indivial_i, :] = [ 7. 3. 8. 11.]
361 cord_individual_obj[indivial_i, :] = [ 8. 3. 102. 105.]
362 cord_individual_obj[indivial_i, :] = [ 9. 5. 18. 23.]
363
364 min(cord_individual_obj[:, 3]) = 11.0
365 historl_G_best_iter[iter, 3] = 11.0
366 Begin iteration:
367
368 iter = 21
369 cord_individual_obj[indivial_i, :] = [ 0. 3. 8. 11.]
370 cord_individual_obj[indivial_i, :] = [ 1. 3. 80. 83.]
371 cord_individual_obj[indivial_i, :] = [ 2. 3. 18. 21.]
372 cord_individual_obj[indivial_i, :] = [ 3. 3. 102. 105.]
373 cord_individual_obj[indivial_i, :] = [ 4. 4. 80. 84.]
374 cord_individual_obj[indivial_i, :] = [ 5. 3. 80. 83.]
375 cord_individual_obj[indivial_i, :] = [ 6. 3. 96. 99.]
376 cord_individual_obj[indivial_i, :] = [ 7. 4. 118. 122.]
377 cord_individual_obj[indivial_i, :] = [ 8. 4. 126. 130.]
378 cord_individual_obj[indivial_i, :] = [ 9. 4. 102. 106.]
379
380 min(cord_individual_obj[:, 3]) = 11.0
381 historl_G_best_iter[iter, 3] = 11.0
382 Begin iteration:
383
384 iter = 22
385 cord_individual_obj[indivial_i, :] = [ 0. 3. 132. 135.]
386 cord_individual_obj[indivial_i, :] = [ 1. 4. 54. 58.]
387 cord_individual_obj[indivial_i, :] = [ 2. 3. 54. 57.]
388 cord_individual_obj[indivial_i, :] = [ 3. 3. 102. 105.]
389 cord_individual_obj[indivial_i, :] = [ 4. 4. 80. 84.]
390 cord_individual_obj[indivial_i, :] = [ 5. 3. 80. 83.]
391 cord_individual_obj[indivial_i, :] = [ 6. 4. 96. 100.]
392 cord_individual_obj[indivial_i, :] = [ 7. 3. 96. 99.]
393 cord_individual_obj[indivial_i, :] = [ 8. 3. 8. 11.]
394 cord_individual_obj[indivial_i, :] = [ 9. 4. 68. 72.]
395
396 min(cord_individual_obj[:, 3]) = 11.0
397 historl_G_best_iter[iter, 3] = 11.0
398 Begin iteration:
399
400 iter = 23
401 cord_individual_obj[indivial_i, :] = [ 0. 3. 8. 11.]
402 cord_individual_obj[indivial_i, :] = [ 1. 3. 80. 83.]
403 cord_individual_obj[indivial_i, :] = [ 2. 3. 96. 99.]
404 cord_individual_obj[indivial_i, :] = [ 3. 3. 96. 99.]
405 cord_individual_obj[indivial_i, :] = [ 4. 3. 80. 83.]
406 cord_individual_obj[indivial_i, :] = [ 5. 3. 80. 83.]
407 cord_individual_obj[indivial_i, :] = [ 6. 3. 96. 99.]
408 cord_individual_obj[indivial_i, :] = [ 7. 4. 58. 62.]
409 cord_individual_obj[indivial_i, :] = [ 8. 4. 154. 158.]
410 cord_individual_obj[indivial_i, :] = [ 9. 3. 88. 91.]
411
412 min(cord_individual_obj[:, 3]) = 11.0
413 historl_G_best_iter[iter, 3] = 11.0
414 Begin iteration:
415
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416 iter = 24
417 cord_individual_obj[indivial_i, :] = [ 0.  3. 80. 83.]
418 cord_individual_obj[indivial_i, :] = [ 1.  4. 18. 22.]
419 cord_individual_obj[indivial_i, :] = [ 2.  3. 54. 57.]
420 cord_individual_obj[indivial_i, :] = [ 3.  3. 114. 117.]
421 cord_individual_obj[indivial_i, :] = [ 4.  4. 80. 84.]
422 cord_individual_obj[indivial_i, :] = [ 5.  3. 80. 83.]
423 cord_individual_obj[indivial_i, :] = [ 6.  4. 32. 36.]
424 cord_individual_obj[indivial_i, :] = [ 7.  4. 62. 66.]
425 cord_individual_obj[indivial_i, :] = [ 8.  3. 8. 11.]
426 cord_individual_obj[indivial_i, :] = [ 9.  4. 54. 58.]
427
428 min(cord_individual_obj[:, 3]) = 11.0
429 historl_G_best_iter[iter, 3] = 11.0
430 Begin iteration:
431
432 iter = 25
433 cord_individual_obj[indivial_i, :] = [ 0.  3. 118. 121.]
434 cord_individual_obj[indivial_i, :] = [ 1.  4. 54. 58.]
435 cord_individual_obj[indivial_i, :] = [ 2.  3. 54. 57.]
436 cord_individual_obj[indivial_i, :] = [ 3.  3. 8. 11.]
437 cord_individual_obj[indivial_i, :] = [ 4.  4. 80. 84.]
438 cord_individual_obj[indivial_i, :] = [ 5.  3. 80. 83.]
439 cord_individual_obj[indivial_i, :] = [ 6.  4. 80. 84.]
440 cord_individual_obj[indivial_i, :] = [ 7.  4. 118. 122.]
441 cord_individual_obj[indivial_i, :] = [ 8.  4. 116. 120.]
442 cord_individual_obj[indivial_i, :] = [ 9.  4. 62. 66.]
443
444 min(cord_individual_obj[:, 3]) = 11.0
445 historl_G_best_iter[iter, 3] = 11.0
446 Begin iteration:
447
448 iter = 26
449 cord_individual_obj[indivial_i, :] = [ 0.  3. 104. 107.]
450 cord_individual_obj[indivial_i, :] = [ 1.  4. 54. 58.]
451 cord_individual_obj[indivial_i, :] = [ 2.  3. 54. 57.]
452 cord_individual_obj[indivial_i, :] = [ 3.  3. 54. 57.]
453 cord_individual_obj[indivial_i, :] = [ 4.  4. 80. 84.]
454 cord_individual_obj[indivial_i, :] = [ 5.  3. 80. 83.]
455 cord_individual_obj[indivial_i, :] = [ 6.  4. 80. 84.]
456 cord_individual_obj[indivial_i, :] = [ 7.  3. 8. 11.]
457 cord_individual_obj[indivial_i, :] = [ 8.  4. 154. 158.]
458 cord_individual_obj[indivial_i, :] = [ 9.  4. 54. 58.]
459
460 min(cord_individual_obj[:, 3]) = 11.0
461 historl_G_best_iter[iter, 3] = 11.0
462 Begin iteration:
463
464 iter = 27
465 cord_individual_obj[indivial_i, :] = [ 0.  3. 32. 35.]
466 cord_individual_obj[indivial_i, :] = [ 1.  3. 32. 35.]
467 cord_individual_obj[indivial_i, :] = [ 2.  3. 32. 35.]
468 cord_individual_obj[indivial_i, :] = [ 3.  3. 116. 119.]
469 cord_individual_obj[indivial_i, :] = [ 4.  3. 80. 83.]
470 cord_individual_obj[indivial_i, :] = [ 5.  3. 80. 83.]
471 cord_individual_obj[indivial_i, :] = [ 6.  3. 80. 83.]
472 cord_individual_obj[indivial_i, :] = [ 7.  4. 62. 66.]
473 cord_individual_obj[indivial_i, :] = [ 8.  3. 8. 11.]
474 cord_individual_obj[indivial_i, :] = [ 9.  3. 116. 119.]
475
476 min(cord_individual_obj[:, 3]) = 11.0
477 historl_G_best_iter[iter, 3] = 11.0
478 Begin iteration:
479
480 iter = 28
481 cord_individual_obj[indivial_i, :] = [ 0.  3. 130. 133.]
482 cord_individual_obj[indivial_i, :] = [ 1.  4. 8. 12.]
483 cord_individual_obj[indivial_i, :] = [ 2.  3. 54. 57.]
484 cord_individual_obj[indivial_i, :] = [ 3.  3. 8. 11.]
485 cord_individual_obj[indivial_i, :] = [ 4.  4. 80. 84.]
486 cord_individual_obj[indivial_i, :] = [ 5.  3. 80. 83.]
487 cord_individual_obj[indivial_i, :] = [ 6.  4. 8. 12.]
488 cord_individual_obj[indivial_i, :] = [ 7.  4. 8. 12.]
489 cord_individual_obj[indivial_i, :] = [ 8.  4. 96. 100.]
490 cord_individual_obj[indivial_i, :] = [ 9.  4. 18. 22.]
491
492 min(cord_individual_obj[:, 3]) = 11.0
493 historl_G_best_iter[iter, 3] = 11.0
494 Begin iteration:
495
496 iter = 29
497 cord_individual_obj[indivial_i, :] = [ 0.  3. 8. 11.]
498 cord_individual_obj[indivial_i, :] = [ 1.  4. 54. 58.]
499 cord_individual_obj[indivial_i, :] = [ 2.  3. 54. 57.]

```

```

500 cord_individual_obj[indivial_i,:] = [ 3. 3. 62. 65.]
501 cord_individual_obj[indivial_i,:] = [ 4. 4. 80. 84.]
502 cord_individual_obj[indivial_i,:] = [ 5. 3. 80. 83.]
503 cord_individual_obj[indivial_i,:] = [ 6. 4. 80. 84.]
504 cord_individual_obj[indivial_i,:] = [ 7. 4. 108. 112.]
505 cord_individual_obj[indivial_i,:] = [ 8. 4. 80. 84.]
506 cord_individual_obj[indivial_i,:] = [ 9. 4. 80. 84.]
507
508 min(cord_individual_obj[:, 3]) = 11.0
509 historl_G_best_iter[iter, 3] = 11.0
510 Begin iteration:
511
512 iter = 30
513 cord_individual_obj[indivial_i,:] = [ 0. 3. 104. 107.]
514 cord_individual_obj[indivial_i,:] = [ 1. 4. 54. 58.]
515 cord_individual_obj[indivial_i,:] = [ 2. 3. 54. 57.]
516 cord_individual_obj[indivial_i,:] = [ 3. 3. 62. 65.]
517 cord_individual_obj[indivial_i,:] = [ 4. 4. 80. 84.]
518 cord_individual_obj[indivial_i,:] = [ 5. 3. 80. 83.]
519 cord_individual_obj[indivial_i,:] = [ 6. 4. 80. 84.]
520 cord_individual_obj[indivial_i,:] = [ 7. 3. 8. 11.]
521 cord_individual_obj[indivial_i,:] = [ 8. 4. 80. 84.]
522 cord_individual_obj[indivial_i,:] = [ 9. 4. 54. 58.]
523
524 min(cord_individual_obj[:, 3]) = 11.0
525 historl_G_best_iter[iter, 3] = 11.0
526 Iteration calculate over
527
528
529
530
531 All item are in Bin and:
532 Bin area = 1080
533 Real_area = 83.0
534 Proportion_of_area = 0.07685185185185185
535 BEST_CHROM =
536     berth: [20.5 26. 3. 15.5 7.5 11. ]
537     time: [0. 0. 0. 0. 0.]
538     num_QC: [3. 2. 6. 3. 3. 4.]
539 Objective function values and some other indicators:
540 Obj0= 3.00          Obj1= 8.00          Obj0 + Obj1 = 11.00
541 Total movement of crane: 8.00
542 Total waiting time in berth position: 0.00
543 Total index of q during berthing: 472.00
544 Specific arrangement for each vessel:
545
      V_id: 0           li: 5.0           xi: 20.5           bow of i: 18.0           tail of i: 23.0           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
546
      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
547
      V_id: 2           li: 6.0           xi: 3.0            bow of i: 0.0           tail of i: 6.0           gama_i0: 0.0           gama_i1: 2.0
      260.0             gama_i1 + 1: 3.0           gama_i1 - gama_i0: 2.0           duration_time_i: 3.0           demand_i: 260.0           work load_i:
      work load gap_i: 0
548
      V_id: 3           li: 5.0           xi: 15.5           bow of i: 13.0           tail of i: 18.0           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
549
      V_id: 4           li: 3.0           xi: 7.5            bow of i: 6.0           tail of i: 9.0           gama_i0: 0.0           gama_i1: 3.0
      200.0             gama_i1 + 1: 4.0           gama_i1 - gama_i0: 3.0           duration_time_i: 4.0           demand_i: 200.0           work load_i:
      work load gap_i: 0
550
      V_id: 5           li: 4.0           xi: 11.0           bow of i: 9.0           tail of i: 13.0           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: 220.0           work
      load_i: 220.0     work load gap_i: 0
551
552 Algorithm finished and the total CPU time: 131 s
553 End
554

```