

unknown

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80 iter = 3
81 cord_individual_obj[indivial_i, :] = [ 0. 5. 134. 139.]
82 cord_individual_obj[indivial_i, :] = [ 1. 5. 8. 13.]
83 cord_individual_obj[indivial_i, :] = [ 2. 5. 142. 147.]
84 cord_individual_obj[indivial_i, :] = [ 3. 5. 16. 21.]
85 cord_individual_obj[indivial_i, :] = [ 4. 5. 150. 155.]
86 cord_individual_obj[indivial_i, :] = [ 5. 5. 8. 13.]
87 cord_individual_obj[indivial_i, :] = [ 6. 4. 16. 20.]
88 cord_individual_obj[indivial_i, :] = [ 7. 5. 8. 13.]
89 cord_individual_obj[indivial_i, :] = [ 8. 5. 8. 13.]
90 cord_individual_obj[indivial_i, :] = [ 9. 5. 16. 21.]
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. 6. 24. 30.]
98 cord_individual_obj[indivial_i, :] = [ 1. 4. 18. 22.]
99 cord_individual_obj[indivial_i, :] = [ 2. 6. 8. 14.]
100 cord_individual_obj[indivial_i, :] = [ 3. 5. 18. 23.]
101 cord_individual_obj[indivial_i, :] = [ 4. 5. 8. 13.]
102 cord_individual_obj[indivial_i, :] = [ 5. 5. 18. 23.]
103 cord_individual_obj[indivial_i, :] = [ 6. 6. 8. 14.]
104 cord_individual_obj[indivial_i, :] = [ 7. 6. 12. 18.]
105 cord_individual_obj[indivial_i, :] = [ 8. 5. 24. 29.]
106 cord_individual_obj[indivial_i, :] = [ 9. 6. 16. 22.]
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. 6. 18. 24.]
115 cord_individual_obj[indivial_i, :] = [ 2. 6. 8. 14.]
116 cord_individual_obj[indivial_i, :] = [ 3. 5. 44. 49.]
117 cord_individual_obj[indivial_i, :] = [ 4. 5. 18. 23.]
118 cord_individual_obj[indivial_i, :] = [ 5. 6. 28. 34.]
119 cord_individual_obj[indivial_i, :] = [ 6. 6. 8. 14.]
120 cord_individual_obj[indivial_i, :] = [ 7. 6. 8. 14.]
121 cord_individual_obj[indivial_i, :] = [ 8. 5. 18. 23.]
122 cord_individual_obj[indivial_i, :] = [ 9. 6. 8. 14.]
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. 36. 41.]
130 cord_individual_obj[indivial_i, :] = [ 1. 4. 18. 22.]
131 cord_individual_obj[indivial_i, :] = [ 2. 5. 24. 29.]
132 cord_individual_obj[indivial_i, :] = [ 3. 5. 8. 13.]
133 cord_individual_obj[indivial_i, :] = [ 4. 5. 18. 23.]
134 cord_individual_obj[indivial_i, :] = [ 5. 6. 8. 14.]
135 cord_individual_obj[indivial_i, :] = [ 6. 4. 24. 28.]
136 cord_individual_obj[indivial_i, :] = [ 7. 4. 18. 22.]
137 cord_individual_obj[indivial_i, :] = [ 8. 5. 18. 23.]
138 cord_individual_obj[indivial_i, :] = [ 9. 5. 12. 17.]
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. 8. 13.]
146 cord_individual_obj[indivial_i, :] = [ 1. 4. 18. 22.]
147 cord_individual_obj[indivial_i, :] = [ 2. 5. 44. 49.]
148 cord_individual_obj[indivial_i, :] = [ 3. 5. 24. 29.]
149 cord_individual_obj[indivial_i, :] = [ 4. 5. 18. 23.]
150 cord_individual_obj[indivial_i, :] = [ 5. 5. 18. 23.]
151 cord_individual_obj[indivial_i, :] = [ 6. 4. 44. 48.]
152 cord_individual_obj[indivial_i, :] = [ 7. 5. 36. 41.]
153 cord_individual_obj[indivial_i, :] = [ 8. 5. 18. 23.]
154 cord_individual_obj[indivial_i, :] = [ 9. 5. 36. 41.]
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. 36. 41.]
162 cord_individual_obj[indivial_i, :] = [ 1. 3. 52. 55.]
163 cord_individual_obj[indivial_i, :] = [ 2. 5. 8. 13.]

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164 cord_individual_obj[indivial_i, :] = [ 3. 5. 44. 49.]
165 cord_individual_obj[indivial_i, :] = [ 4. 5. 44. 49.]
166 cord_individual_obj[indivial_i, :] = [ 5. 5. 44. 49.]
167 cord_individual_obj[indivial_i, :] = [ 6. 5. 44. 49.]
168 cord_individual_obj[indivial_i, :] = [ 7. 5. 44. 49.]
169 cord_individual_obj[indivial_i, :] = [ 8. 5. 44. 49.]
170 cord_individual_obj[indivial_i, :] = [ 9. 5. 44. 49.]
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. 36. 41.]
178 cord_individual_obj[indivial_i, :] = [ 1. 5. 8. 13.]
179 cord_individual_obj[indivial_i, :] = [ 2. 5. 44. 49.]
180 cord_individual_obj[indivial_i, :] = [ 3. 5. 24. 29.]
181 cord_individual_obj[indivial_i, :] = [ 4. 5. 18. 23.]
182 cord_individual_obj[indivial_i, :] = [ 5. 5. 18. 23.]
183 cord_individual_obj[indivial_i, :] = [ 6. 4. 40. 44.]
184 cord_individual_obj[indivial_i, :] = [ 7. 5. 20. 25.]
185 cord_individual_obj[indivial_i, :] = [ 8. 5. 12. 17.]
186 cord_individual_obj[indivial_i, :] = [ 9. 5. 20. 25.]
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. 42. 47.]
194 cord_individual_obj[indivial_i, :] = [ 1. 5. 18. 23.]
195 cord_individual_obj[indivial_i, :] = [ 2. 5. 8. 13.]
196 cord_individual_obj[indivial_i, :] = [ 3. 5. 22. 27.]
197 cord_individual_obj[indivial_i, :] = [ 4. 5. 18. 23.]
198 cord_individual_obj[indivial_i, :] = [ 5. 6. 8. 14.]
199 cord_individual_obj[indivial_i, :] = [ 6. 5. 8. 13.]
200 cord_individual_obj[indivial_i, :] = [ 7. 5. 8. 13.]
201 cord_individual_obj[indivial_i, :] = [ 8. 5. 18. 23.]
202 cord_individual_obj[indivial_i, :] = [ 9. 5. 24. 29.]
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. 3. 66. 69.]
211 cord_individual_obj[indivial_i, :] = [ 2. 5. 44. 49.]
212 cord_individual_obj[indivial_i, :] = [ 3. 5. 44. 49.]
213 cord_individual_obj[indivial_i, :] = [ 4. 5. 36. 41.]
214 cord_individual_obj[indivial_i, :] = [ 5. 5. 68. 73.]
215 cord_individual_obj[indivial_i, :] = [ 6. 5. 44. 49.]
216 cord_individual_obj[indivial_i, :] = [ 7. 5. 52. 57.]
217 cord_individual_obj[indivial_i, :] = [ 8. 5. 36. 41.]
218 cord_individual_obj[indivial_i, :] = [ 9. 5. 36. 41.]
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. 36. 41.]
226 cord_individual_obj[indivial_i, :] = [ 1. 4. 18. 22.]
227 cord_individual_obj[indivial_i, :] = [ 2. 5. 24. 29.]
228 cord_individual_obj[indivial_i, :] = [ 3. 5. 8. 13.]
229 cord_individual_obj[indivial_i, :] = [ 4. 5. 18. 23.]
230 cord_individual_obj[indivial_i, :] = [ 5. 5. 8. 13.]
231 cord_individual_obj[indivial_i, :] = [ 6. 4. 32. 36.]
232 cord_individual_obj[indivial_i, :] = [ 7. 3. 32. 35.]
233 cord_individual_obj[indivial_i, :] = [ 8. 5. 18. 23.]
234 cord_individual_obj[indivial_i, :] = [ 9. 5. 32. 37.]
235
236 min(cord_individual_obj[:, 3]) = 13.0
237 historl_G_best_iter[iter, 3] = 13.0
238 Begin iteration:
239
240 iter = 13
241 cord_individual_obj[indivial_i, :] = [ 0. 5. 8. 13.]
242 cord_individual_obj[indivial_i, :] = [ 1. 6. 12. 18.]
243 cord_individual_obj[indivial_i, :] = [ 2. 5. 12. 17.]
244 cord_individual_obj[indivial_i, :] = [ 3. 6. 12. 18.]
245 cord_individual_obj[indivial_i, :] = [ 4. 6. 24. 30.]
246 cord_individual_obj[indivial_i, :] = [ 5. 6. 12. 18.]
247 cord_individual_obj[indivial_i, :] = [ 6. 5. 12. 17.]

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248     cord_individual_obj[indivial_i, :] = [ 7. 5. 12. 17.]
249     cord_individual_obj[indivial_i, :] = [ 8. 6. 12. 18.]
250     cord_individual_obj[indivial_i, :] = [ 9. 5. 32. 37.]
251
252 min(cord_individual_obj[:, 3]) = 13.0
253 historl_G_best_iter[iter, 3] = 13.0
254 Begin iteration:
255
256 iter = 14
257     cord_individual_obj[indivial_i, :] = [ 0. 5. 24. 29.]
258     cord_individual_obj[indivial_i, :] = [ 1. 4. 30. 34.]
259     cord_individual_obj[indivial_i, :] = [ 2. 5. 24. 29.]
260     cord_individual_obj[indivial_i, :] = [ 3. 5. 24. 29.]
261     cord_individual_obj[indivial_i, :] = [ 4. 5. 30. 35.]
262     cord_individual_obj[indivial_i, :] = [ 5. 5. 24. 29.]
263     cord_individual_obj[indivial_i, :] = [ 6. 4. 44. 48.]
264     cord_individual_obj[indivial_i, :] = [ 7. 5. 24. 29.]
265     cord_individual_obj[indivial_i, :] = [ 8. 5. 24. 29.]
266     cord_individual_obj[indivial_i, :] = [ 9. 5. 8. 13.]
267
268 min(cord_individual_obj[:, 3]) = 13.0
269 historl_G_best_iter[iter, 3] = 13.0
270 Begin iteration:
271
272 iter = 15
273     cord_individual_obj[indivial_i, :] = [ 0. 5. 8. 13.]
274     cord_individual_obj[indivial_i, :] = [ 1. 6. 20. 26.]
275     cord_individual_obj[indivial_i, :] = [ 2. 5. 104. 109.]
276     cord_individual_obj[indivial_i, :] = [ 3. 5. 18. 23.]
277     cord_individual_obj[indivial_i, :] = [ 4. 6. 36. 42.]
278     cord_individual_obj[indivial_i, :] = [ 5. 6. 8. 14.]
279     cord_individual_obj[indivial_i, :] = [ 6. 5. 8. 13.]
280     cord_individual_obj[indivial_i, :] = [ 7. 4. 8. 12.]
281     cord_individual_obj[indivial_i, :] = [ 8. 6. 8. 14.]
282     cord_individual_obj[indivial_i, :] = [ 9. 5. 54. 59.]
283
284 min(cord_individual_obj[:, 3]) = 12.0
285 historl_G_best_iter[iter, 3] = 12.0
286 Begin iteration:
287
288 iter = 16
289     cord_individual_obj[indivial_i, :] = [ 0. 4. 78. 82.]
290     cord_individual_obj[indivial_i, :] = [ 1. 6. 48. 54.]
291     cord_individual_obj[indivial_i, :] = [ 2. 4. 8. 12.]
292     cord_individual_obj[indivial_i, :] = [ 3. 6. 28. 34.]
293     cord_individual_obj[indivial_i, :] = [ 4. 4. 58. 62.]
294     cord_individual_obj[indivial_i, :] = [ 5. 6. 48. 54.]
295     cord_individual_obj[indivial_i, :] = [ 6. 4. 28. 32.]
296     cord_individual_obj[indivial_i, :] = [ 7. 4. 12. 16.]
297     cord_individual_obj[indivial_i, :] = [ 8. 5. 36. 41.]
298     cord_individual_obj[indivial_i, :] = [ 9. 5. 12. 17.]
299
300 min(cord_individual_obj[:, 3]) = 12.0
301 historl_G_best_iter[iter, 3] = 12.0
302 Begin iteration:
303
304 iter = 17
305     cord_individual_obj[indivial_i, :] = [ 0. 4. 8. 12.]
306     cord_individual_obj[indivial_i, :] = [ 1. 6. 12. 18.]
307     cord_individual_obj[indivial_i, :] = [ 2. 4. 12. 16.]
308     cord_individual_obj[indivial_i, :] = [ 3. 6. 28. 34.]
309     cord_individual_obj[indivial_i, :] = [ 4. 6. 12. 18.]
310     cord_individual_obj[indivial_i, :] = [ 5. 6. 28. 34.]
311     cord_individual_obj[indivial_i, :] = [ 6. 4. 12. 16.]
312     cord_individual_obj[indivial_i, :] = [ 7. 4. 58. 62.]
313     cord_individual_obj[indivial_i, :] = [ 8. 6. 48. 54.]
314     cord_individual_obj[indivial_i, :] = [ 9. 4. 18. 22.]
315
316 min(cord_individual_obj[:, 3]) = 12.0
317 historl_G_best_iter[iter, 3] = 12.0
318 Begin iteration:
319
320 iter = 18
321     cord_individual_obj[indivial_i, :] = [ 0. 4. 12. 16.]
322     cord_individual_obj[indivial_i, :] = [ 1. 4. 30. 34.]
323     cord_individual_obj[indivial_i, :] = [ 2. 4. 30. 34.]
324     cord_individual_obj[indivial_i, :] = [ 3. 4. 52. 56.]
325     cord_individual_obj[indivial_i, :] = [ 4. 4. 12. 16.]
326     cord_individual_obj[indivial_i, :] = [ 5. 4. 48. 52.]
327     cord_individual_obj[indivial_i, :] = [ 6. 4. 12. 16.]
328     cord_individual_obj[indivial_i, :] = [ 7. 4. 8. 12.]
329     cord_individual_obj[indivial_i, :] = [ 8. 4. 52. 56.]
330     cord_individual_obj[indivial_i, :] = [ 9. 4. 12. 16.]
331
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332 min(cord_individual_obj[:, 3]) = 12.0
333 historl_G_best_iter[iter, 3] = 12.0
334 Begin iteration:
335
336 iter = 19
337 cord_individual_obj[indivial_i, :] = [ 0.  4. 12. 16.]
338 cord_individual_obj[indivial_i, :] = [ 1.  6. 12. 18.]
339 cord_individual_obj[indivial_i, :] = [ 2.  4. 12. 16.]
340 cord_individual_obj[indivial_i, :] = [ 3.  4.  8. 12.]
341 cord_individual_obj[indivial_i, :] = [ 4.  6. 12. 18.]
342 cord_individual_obj[indivial_i, :] = [ 5.  6. 28. 34.]
343 cord_individual_obj[indivial_i, :] = [ 6.  4. 12. 16.]
344 cord_individual_obj[indivial_i, :] = [ 7.  4. 28. 32.]
345 cord_individual_obj[indivial_i, :] = [ 8.  6. 12. 18.]
346 cord_individual_obj[indivial_i, :] = [ 9.  4. 12. 16.]
347
348 min(cord_individual_obj[:, 3]) = 12.0
349 historl_G_best_iter[iter, 3] = 12.0
350 Begin iteration:
351
352 iter = 20
353 cord_individual_obj[indivial_i, :] = [ 0.  4.  8. 12.]
354 cord_individual_obj[indivial_i, :] = [ 1.  5. 72. 77.]
355 cord_individual_obj[indivial_i, :] = [ 2.  4. 126. 130.]
356 cord_individual_obj[indivial_i, :] = [ 3.  6. 28. 34.]
357 cord_individual_obj[indivial_i, :] = [ 4.  6. 12. 18.]
358 cord_individual_obj[indivial_i, :] = [ 5.  4.  8. 12.]
359 cord_individual_obj[indivial_i, :] = [ 6.  5.  8. 13.]
360 cord_individual_obj[indivial_i, :] = [ 7.  4.  8. 12.]
361 cord_individual_obj[indivial_i, :] = [ 8.  6.  8. 14.]
362 cord_individual_obj[indivial_i, :] = [ 9.  4. 100. 104.]
363
364 min(cord_individual_obj[:, 3]) = 12.0
365 historl_G_best_iter[iter, 3] = 12.0
366 Begin iteration:
367
368 iter = 21
369 cord_individual_obj[indivial_i, :] = [ 0.  4. 12. 16.]
370 cord_individual_obj[indivial_i, :] = [ 1.  6. 64. 70.]
371 cord_individual_obj[indivial_i, :] = [ 2.  4.  8. 12.]
372 cord_individual_obj[indivial_i, :] = [ 3.  4. 24. 28.]
373 cord_individual_obj[indivial_i, :] = [ 4.  4. 20. 24.]
374 cord_individual_obj[indivial_i, :] = [ 5.  6. 24. 30.]
375 cord_individual_obj[indivial_i, :] = [ 6.  4. 12. 16.]
376 cord_individual_obj[indivial_i, :] = [ 7.  4. 24. 28.]
377 cord_individual_obj[indivial_i, :] = [ 8.  4. 12. 16.]
378 cord_individual_obj[indivial_i, :] = [ 9.  4. 12. 16.]
379
380 min(cord_individual_obj[:, 3]) = 12.0
381 historl_G_best_iter[iter, 3] = 12.0
382 Begin iteration:
383
384 iter = 22
385 cord_individual_obj[indivial_i, :] = [ 0.  4. 12. 16.]
386 cord_individual_obj[indivial_i, :] = [ 1.  4.  8. 12.]
387 cord_individual_obj[indivial_i, :] = [ 2.  4. 76. 80.]
388 cord_individual_obj[indivial_i, :] = [ 3.  6. 12. 18.]
389 cord_individual_obj[indivial_i, :] = [ 4.  6. 12. 18.]
390 cord_individual_obj[indivial_i, :] = [ 5.  4. 24. 28.]
391 cord_individual_obj[indivial_i, :] = [ 6.  4. 12. 16.]
392 cord_individual_obj[indivial_i, :] = [ 7.  4. 12. 16.]
393 cord_individual_obj[indivial_i, :] = [ 8.  6. 44. 50.]
394 cord_individual_obj[indivial_i, :] = [ 9.  4. 12. 16.]
395
396 min(cord_individual_obj[:, 3]) = 12.0
397 historl_G_best_iter[iter, 3] = 12.0
398 Begin iteration:
399
400 iter = 23
401 cord_individual_obj[indivial_i, :] = [ 0.  4.  8. 12.]
402 cord_individual_obj[indivial_i, :] = [ 1.  6. 24. 30.]
403 cord_individual_obj[indivial_i, :] = [ 2.  4.  8. 12.]
404 cord_individual_obj[indivial_i, :] = [ 3.  6. 24. 30.]
405 cord_individual_obj[indivial_i, :] = [ 4.  6. 54. 60.]
406 cord_individual_obj[indivial_i, :] = [ 5.  6. 24. 30.]
407 cord_individual_obj[indivial_i, :] = [ 6.  4. 18. 22.]
408 cord_individual_obj[indivial_i, :] = [ 7.  5.  8. 13.]
409 cord_individual_obj[indivial_i, :] = [ 8.  4.  8. 12.]
410 cord_individual_obj[indivial_i, :] = [ 9.  4. 18. 22.]
411
412 min(cord_individual_obj[:, 3]) = 12.0
413 historl_G_best_iter[iter, 3] = 12.0
414 Begin iteration:
415

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416 iter = 24
417 cord_individual_obj[indivial_i, :] = [ 0. 4. 12. 16.]
418 cord_individual_obj[indivial_i, :] = [ 1. 6. 56. 62.]
419 cord_individual_obj[indivial_i, :] = [ 2. 4. 30. 34.]
420 cord_individual_obj[indivial_i, :] = [ 3. 6. 24. 30.]
421 cord_individual_obj[indivial_i, :] = [ 4. 4. 8. 12.]
422 cord_individual_obj[indivial_i, :] = [ 5. 6. 12. 18.]
423 cord_individual_obj[indivial_i, :] = [ 6. 4. 12. 16.]
424 cord_individual_obj[indivial_i, :] = [ 7. 4. 52. 56.]
425 cord_individual_obj[indivial_i, :] = [ 8. 6. 44. 50.]
426 cord_individual_obj[indivial_i, :] = [ 9. 4. 12. 16.]
427
428 min(cord_individual_obj[:, 3]) = 12.0
429 historl_G_best_iter[iter, 3] = 12.0
430 Begin iteration:
431
432 iter = 25
433 cord_individual_obj[indivial_i, :] = [ 0. 4. 12. 16.]
434 cord_individual_obj[indivial_i, :] = [ 1. 4. 8. 12.]
435 cord_individual_obj[indivial_i, :] = [ 2. 4. 12. 16.]
436 cord_individual_obj[indivial_i, :] = [ 3. 4. 52. 56.]
437 cord_individual_obj[indivial_i, :] = [ 4. 6. 12. 18.]
438 cord_individual_obj[indivial_i, :] = [ 5. 4. 52. 56.]
439 cord_individual_obj[indivial_i, :] = [ 6. 4. 12. 16.]
440 cord_individual_obj[indivial_i, :] = [ 7. 4. 52. 56.]
441 cord_individual_obj[indivial_i, :] = [ 8. 4. 52. 56.]
442 cord_individual_obj[indivial_i, :] = [ 9. 4. 12. 16.]
443
444 min(cord_individual_obj[:, 3]) = 12.0
445 historl_G_best_iter[iter, 3] = 12.0
446 Begin iteration:
447
448 iter = 26
449 cord_individual_obj[indivial_i, :] = [ 0. 4. 18. 22.]
450 cord_individual_obj[indivial_i, :] = [ 1. 6. 44. 50.]
451 cord_individual_obj[indivial_i, :] = [ 2. 4. 18. 22.]
452 cord_individual_obj[indivial_i, :] = [ 3. 4. 8. 12.]
453 cord_individual_obj[indivial_i, :] = [ 4. 6. 72. 78.]
454 cord_individual_obj[indivial_i, :] = [ 5. 6. 8. 14.]
455 cord_individual_obj[indivial_i, :] = [ 6. 4. 24. 28.]
456 cord_individual_obj[indivial_i, :] = [ 7. 4. 18. 22.]
457 cord_individual_obj[indivial_i, :] = [ 8. 6. 8. 14.]
458 cord_individual_obj[indivial_i, :] = [ 9. 4. 18. 22.]
459
460 min(cord_individual_obj[:, 3]) = 12.0
461 historl_G_best_iter[iter, 3] = 12.0
462 Begin iteration:
463
464 iter = 27
465 cord_individual_obj[indivial_i, :] = [ 0. 4. 18. 22.]
466 cord_individual_obj[indivial_i, :] = [ 1. 4. 12. 16.]
467 cord_individual_obj[indivial_i, :] = [ 2. 4. 24. 28.]
468 cord_individual_obj[indivial_i, :] = [ 3. 6. 12. 18.]
469 cord_individual_obj[indivial_i, :] = [ 4. 4. 8. 12.]
470 cord_individual_obj[indivial_i, :] = [ 5. 4. 52. 56.]
471 cord_individual_obj[indivial_i, :] = [ 6. 4. 12. 16.]
472 cord_individual_obj[indivial_i, :] = [ 7. 4. 30. 34.]
473 cord_individual_obj[indivial_i, :] = [ 8. 4. 44. 48.]
474 cord_individual_obj[indivial_i, :] = [ 9. 4. 12. 16.]
475
476 min(cord_individual_obj[:, 3]) = 12.0
477 historl_G_best_iter[iter, 3] = 12.0
478 Begin iteration:
479
480 iter = 28
481 cord_individual_obj[indivial_i, :] = [ 0. 4. 12. 16.]
482 cord_individual_obj[indivial_i, :] = [ 1. 6. 8. 14.]
483 cord_individual_obj[indivial_i, :] = [ 2. 4. 78. 82.]
484 cord_individual_obj[indivial_i, :] = [ 3. 6. 12. 18.]
485 cord_individual_obj[indivial_i, :] = [ 4. 6. 12. 18.]
486 cord_individual_obj[indivial_i, :] = [ 5. 4. 8. 12.]
487 cord_individual_obj[indivial_i, :] = [ 6. 4. 12. 16.]
488 cord_individual_obj[indivial_i, :] = [ 7. 4. 12. 16.]
489 cord_individual_obj[indivial_i, :] = [ 8. 6. 12. 18.]
490 cord_individual_obj[indivial_i, :] = [ 9. 4. 12. 16.]
491
492 min(cord_individual_obj[:, 3]) = 12.0
493 historl_G_best_iter[iter, 3] = 12.0
494 Begin iteration:
495
496 iter = 29
497 cord_individual_obj[indivial_i, :] = [ 0. 4. 12. 16.]
498 cord_individual_obj[indivial_i, :] = [ 1. 4. 24. 28.]
499 cord_individual_obj[indivial_i, :] = [ 2. 4. 8. 12.]

```

```

500 cord_individual_obj[indivial_i,:] = [ 3. 4. 12. 16.]
501 cord_individual_obj[indivial_i,:] = [ 4. 4. 12. 16.]
502 cord_individual_obj[indivial_i,:] = [ 5. 6. 12. 18.]
503 cord_individual_obj[indivial_i,:] = [ 6. 4. 12. 16.]
504 cord_individual_obj[indivial_i,:] = [ 7. 4. 30. 34.]
505 cord_individual_obj[indivial_i,:] = [ 8. 4. 12. 16.]
506 cord_individual_obj[indivial_i,:] = [ 9. 4. 12. 16.]
507
508 min(cord_individual_obj[:, 3]) = 12.0
509 historl_G_best_iter[iter, 3] = 12.0
510 Begin iteration:
511
512 iter = 30
513 cord_individual_obj[indivial_i,:] = [ 0. 4. 18. 22.]
514 cord_individual_obj[indivial_i,:] = [ 1. 6. 8. 14.]
515 cord_individual_obj[indivial_i,:] = [ 2. 4. 12. 16.]
516 cord_individual_obj[indivial_i,:] = [ 3. 6. 52. 58.]
517 cord_individual_obj[indivial_i,:] = [ 4. 6. 12. 18.]
518 cord_individual_obj[indivial_i,:] = [ 5. 6. 24. 30.]
519 cord_individual_obj[indivial_i,:] = [ 6. 4. 18. 22.]
520 cord_individual_obj[indivial_i,:] = [ 7. 4. 8. 12.]
521 cord_individual_obj[indivial_i,:] = [ 8. 6. 8. 14.]
522 cord_individual_obj[indivial_i,:] = [ 9. 4. 18. 22.]
523
524 min(cord_individual_obj[:, 3]) = 12.0
525 historl_G_best_iter[iter, 3] = 12.0
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. 8.5 12.5 16. ]
537     time: [0. 0. 0. 0. 0.]
538     num_QC: [3. 2. 3. 2. 2. 4.]
539 Objective function values and some other indicators:
540 Obj0=4.00          Obj1=8.00          Obj0 + Obj1 = 12.00
541 Total movement of crane: 8.00
542 Total waiting time in berth position: 0.00
543 Total index of q during berthing: 526.00
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: 4.0
      260.0             gama_i1 + 1: 5.0           gama_i1 - gama_i0: 4.0           duration_time_i: 5.0           demand_i: 260.0           work load_i:
      work load gap_i: 0
548
      V_id: 3           li: 5.0           xi: 8.5            bow of i: 6.0           tail of i: 11.0           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
549
      V_id: 4           li: 3.0           xi: 12.5           bow of i: 11.0           tail of i: 14.0           gama_i0: 0.0           gama_i1: 4
      .0                 gama_i1 + 1: 5.0           gama_i1 - gama_i0: 4.0           duration_time_i: 5.0           demand_i: 200.0           work
      load_i: 200.0     work load gap_i: 0
550
      V_id: 5           li: 4.0           xi: 16.0           bow of i: 14.0           tail of i: 18.0           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: 138 s
553 End
554

```