

unknown

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80 cord_individual_obj[indivial_i, :] = [16. 4. 28. 32.]
81 cord_individual_obj[indivial_i, :] = [17. 3. 5. 8.]
82 cord_individual_obj[indivial_i, :] = [18. 3. 14. 17.]
83 cord_individual_obj[indivial_i, :] = [19. 3. 34. 37.]
84 cord_individual_obj[indivial_i, :] = [20. 3. 34. 37.]
85 cord_individual_obj[indivial_i, :] = [21. 3. 18. 21.]
86 cord_individual_obj[indivial_i, :] = [22. 5. 55. 60.]
87 cord_individual_obj[indivial_i, :] = [23. 3. 2. 5.]
88 cord_individual_obj[indivial_i, :] = [24. 3. 3. 6.]
89
90 min(cord_individual_obj[:, 3]) = 5.0
91 historl_G_best_iter[iter, 3] = 5.0
92 Begin iteration:
93
94 iter = 2
95 cord_individual_obj[indivial_i, :] = [ 0. 4. 62. 66.]
96 cord_individual_obj[indivial_i, :] = [ 1. 3. 25. 28.]
97 cord_individual_obj[indivial_i, :] = [ 2. 4. 2. 6.]
98 cord_individual_obj[indivial_i, :] = [ 3. 3. 44. 47.]
99 cord_individual_obj[indivial_i, :] = [ 4. 3. 2. 5.]
100 cord_individual_obj[indivial_i, :] = [ 5. 3. 15. 18.]
101 cord_individual_obj[indivial_i, :] = [ 6. 2. 6. 8.]
102 cord_individual_obj[indivial_i, :] = [ 7. 2. 21. 23.]
103 cord_individual_obj[indivial_i, :] = [ 8. 3. 26. 29.]
104 cord_individual_obj[indivial_i, :] = [ 9. 4. 2. 6.]
105 cord_individual_obj[indivial_i, :] = [10. 5. 26. 31.]
106 cord_individual_obj[indivial_i, :] = [11. 4. 77. 81.]
107 cord_individual_obj[indivial_i, :] = [12. 4. 2. 6.]
108 cord_individual_obj[indivial_i, :] = [13. 3. 41. 44.]
109 cord_individual_obj[indivial_i, :] = [14. 4. 1. 5.]
110 cord_individual_obj[indivial_i, :] = [15. 3. 5. 8.]
111 cord_individual_obj[indivial_i, :] = [16. 3. 103. 106.]
112 cord_individual_obj[indivial_i, :] = [17. 3. 46. 49.]
113 cord_individual_obj[indivial_i, :] = [18. 3. 2. 5.]
114 cord_individual_obj[indivial_i, :] = [19. 4. 28. 32.]
115 cord_individual_obj[indivial_i, :] = [20. 3. 26. 29.]
116 cord_individual_obj[indivial_i, :] = [21. 3. 26. 29.]
117 cord_individual_obj[indivial_i, :] = [22. 4. 1. 5.]
118 cord_individual_obj[indivial_i, :] = [23. 3. 6. 9.]
119 cord_individual_obj[indivial_i, :] = [24. 4. 1. 5.]
120
121 min(cord_individual_obj[:, 3]) = 5.0
122 historl_G_best_iter[iter, 3] = 5.0
123 Begin iteration:
124
125 iter = 3
126 cord_individual_obj[indivial_i, :] = [ 0. 4. 80. 84.]
127 cord_individual_obj[indivial_i, :] = [ 1. 3. 33. 36.]
128 cord_individual_obj[indivial_i, :] = [ 2. 3. 34. 37.]
129 cord_individual_obj[indivial_i, :] = [ 3. 2. 51. 53.]
130 cord_individual_obj[indivial_i, :] = [ 4. 4. 2. 6.]
131 cord_individual_obj[indivial_i, :] = [ 5. 5. 55. 60.]
132 cord_individual_obj[indivial_i, :] = [ 6. 3. 14. 17.]
133 cord_individual_obj[indivial_i, :] = [ 7. 3. 1. 4.]
134 cord_individual_obj[indivial_i, :] = [ 8. 3. 38. 41.]
135 cord_individual_obj[indivial_i, :] = [ 9. 3. 14. 17.]
136 cord_individual_obj[indivial_i, :] = [10. 4. 37. 41.]
137 cord_individual_obj[indivial_i, :] = [11. 3. 29. 32.]
138 cord_individual_obj[indivial_i, :] = [12. 3. 21. 24.]
139 cord_individual_obj[indivial_i, :] = [13. 3. 22. 25.]
140 cord_individual_obj[indivial_i, :] = [14. 4. 16. 20.]
141 cord_individual_obj[indivial_i, :] = [15. 3. 13. 16.]
142 cord_individual_obj[indivial_i, :] = [16. 3. 2. 5.]
143 cord_individual_obj[indivial_i, :] = [17. 3. 29. 32.]
144 cord_individual_obj[indivial_i, :] = [18. 5. 5. 10.]
145 cord_individual_obj[indivial_i, :] = [19. 3. 26. 29.]
146 cord_individual_obj[indivial_i, :] = [20. 3. 26. 29.]
147 cord_individual_obj[indivial_i, :] = [21. 4. 31. 35.]
148 cord_individual_obj[indivial_i, :] = [22. 6. 7. 13.]
149 cord_individual_obj[indivial_i, :] = [23. 4. 60. 64.]
150 cord_individual_obj[indivial_i, :] = [24. 4. 1. 5.]
151
152 min(cord_individual_obj[:, 3]) = 4.0
153 historl_G_best_iter[iter, 3] = 4.0
154 Begin iteration:
155
156 iter = 4
157 cord_individual_obj[indivial_i, :] = [0. 3. 1. 4.]
158 cord_individual_obj[indivial_i, :] = [ 1. 3. 25. 28.]
159 cord_individual_obj[indivial_i, :] = [ 2. 3. 26. 29.]
160 cord_individual_obj[indivial_i, :] = [ 3. 2. 53. 55.]
161 cord_individual_obj[indivial_i, :] = [ 4. 3. 2. 5.]
162 cord_individual_obj[indivial_i, :] = [ 5. 3. 14. 17.]
163 cord_individual_obj[indivial_i, :] = [ 6. 3. 21. 24.]

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164 cord_individual_obj[indivial_i, :] = [ 7. 3. 10. 13.]
165 cord_individual_obj[indivial_i, :] = [ 8. 4. 1. 5.]
166 cord_individual_obj[indivial_i, :] = [ 9. 2. 2. 4.]
167 cord_individual_obj[indivial_i, :] = [10. 4. 11. 15.]
168 cord_individual_obj[indivial_i, :] = [11. 3. 51. 54.]
169 cord_individual_obj[indivial_i, :] = [12. 3. 13. 16.]
170 cord_individual_obj[indivial_i, :] = [13. 3. 41. 44.]
171 cord_individual_obj[indivial_i, :] = [14. 4. 1. 5.]
172 cord_individual_obj[indivial_i, :] = [15. 3. 26. 29.]
173 cord_individual_obj[indivial_i, :] = [16. 3. 41. 44.]
174 cord_individual_obj[indivial_i, :] = [17. 2. 65. 67.]
175 cord_individual_obj[indivial_i, :] = [18. 6. 3. 9.]
176 cord_individual_obj[indivial_i, :] = [19. 4. 28. 32.]
177 cord_individual_obj[indivial_i, :] = [20. 3. 38. 41.]
178 cord_individual_obj[indivial_i, :] = [21. 3. 34. 37.]
179 cord_individual_obj[indivial_i, :] = [22. 3. 27. 30.]
180 cord_individual_obj[indivial_i, :] = [23. 3. 77. 80.]
181 cord_individual_obj[indivial_i, :] = [24. 4. 1. 5.]
182
183 min(cord_individual_obj[:, 3]) = 4.0
184 historl_G_best_iter[iter, 3] = 4.0
185 Begin iteration:
186
187 iter = 5
188 cord_individual_obj[indivial_i, :] = [ 0. 3. 41. 44.]
189 cord_individual_obj[indivial_i, :] = [ 1. 3. 25. 28.]
190 cord_individual_obj[indivial_i, :] = [ 2. 3. 34. 37.]
191 cord_individual_obj[indivial_i, :] = [ 3. 2. 51. 53.]
192 cord_individual_obj[indivial_i, :] = [ 4. 5. 2. 7.]
193 cord_individual_obj[indivial_i, :] = [ 5. 3. 14. 17.]
194 cord_individual_obj[indivial_i, :] = [ 6. 3. 21. 24.]
195 cord_individual_obj[indivial_i, :] = [ 7. 5. 2. 7.]
196 cord_individual_obj[indivial_i, :] = [ 8. 5. 2. 7.]
197 cord_individual_obj[indivial_i, :] = [ 9. 5. 2. 7.]
198 cord_individual_obj[indivial_i, :] = [10. 4. 29. 33.]
199 cord_individual_obj[indivial_i, :] = [11. 3. 77. 80.]
200 cord_individual_obj[indivial_i, :] = [12. 3. 13. 16.]
201 cord_individual_obj[indivial_i, :] = [13. 3. 49. 52.]
202 cord_individual_obj[indivial_i, :] = [14. 4. 22. 26.]
203 cord_individual_obj[indivial_i, :] = [15. 3. 14. 17.]
204 cord_individual_obj[indivial_i, :] = [16. 3. 21. 24.]
205 cord_individual_obj[indivial_i, :] = [17. 4. 14. 18.]
206 cord_individual_obj[indivial_i, :] = [18. 3. 6. 9.]
207 cord_individual_obj[indivial_i, :] = [19. 3. 50. 53.]
208 cord_individual_obj[indivial_i, :] = [20. 3. 38. 41.]
209 cord_individual_obj[indivial_i, :] = [21. 3. 14. 17.]
210 cord_individual_obj[indivial_i, :] = [22. 3. 102. 105.]
211 cord_individual_obj[indivial_i, :] = [23. 3. 1. 4.]
212 cord_individual_obj[indivial_i, :] = [24. 5. 2. 7.]
213
214 min(cord_individual_obj[:, 3]) = 4.0
215 historl_G_best_iter[iter, 3] = 4.0
216 Begin iteration:
217
218 iter = 6
219 cord_individual_obj[indivial_i, :] = [ 0. 4. 23. 27.]
220 cord_individual_obj[indivial_i, :] = [ 1. 2. 43. 45.]
221 cord_individual_obj[indivial_i, :] = [ 2. 3. 14. 17.]
222 cord_individual_obj[indivial_i, :] = [ 3. 4. 63. 67.]
223 cord_individual_obj[indivial_i, :] = [ 4. 4. 2. 6.]
224 cord_individual_obj[indivial_i, :] = [ 5. 5. 11. 16.]
225 cord_individual_obj[indivial_i, :] = [ 6. 2. 37. 39.]
226 cord_individual_obj[indivial_i, :] = [ 7. 4. 2. 6.]
227 cord_individual_obj[indivial_i, :] = [ 8. 5. 2. 7.]
228 cord_individual_obj[indivial_i, :] = [ 9. 4. 7. 11.]
229 cord_individual_obj[indivial_i, :] = [10. 4. 11. 15.]
230 cord_individual_obj[indivial_i, :] = [11. 3. 51. 54.]
231 cord_individual_obj[indivial_i, :] = [12. 3. 25. 28.]
232 cord_individual_obj[indivial_i, :] = [13. 3. 61. 64.]
233 cord_individual_obj[indivial_i, :] = [14. 2. 9. 11.]
234 cord_individual_obj[indivial_i, :] = [15. 3. 13. 16.]
235 cord_individual_obj[indivial_i, :] = [16. 3. 61. 64.]
236 cord_individual_obj[indivial_i, :] = [17. 3. 65. 68.]
237 cord_individual_obj[indivial_i, :] = [18. 4. 26. 30.]
238 cord_individual_obj[indivial_i, :] = [19. 4. 28. 32.]
239 cord_individual_obj[indivial_i, :] = [20. 2. 14. 16.]
240 cord_individual_obj[indivial_i, :] = [21. 5. 26. 31.]
241 cord_individual_obj[indivial_i, :] = [22. 3. 1. 4.]
242 cord_individual_obj[indivial_i, :] = [23. 3. 37. 40.]
243 cord_individual_obj[indivial_i, :] = [24. 6. 3. 9.]
244
245 min(cord_individual_obj[:, 3]) = 4.0
246 historl_G_best_iter[iter, 3] = 4.0
247 Begin iteration:

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248
249 iter = 7
250 cord_individual_obj[indivial_i, :] = [ 0.  4. 62. 66.]
251 cord_individual_obj[indivial_i, :] = [ 1.  4. 14. 18.]
252 cord_individual_obj[indivial_i, :] = [ 2.  3. 10. 13.]
253 cord_individual_obj[indivial_i, :] = [ 3.  3. 56. 59.]
254 cord_individual_obj[indivial_i, :] = [ 4.  3. 37. 40.]
255 cord_individual_obj[indivial_i, :] = [ 5.  3. 13. 16.]
256 cord_individual_obj[indivial_i, :] = [ 6.  2. 9. 11.]
257 cord_individual_obj[indivial_i, :] = [ 7.  3. 58. 61.]
258 cord_individual_obj[indivial_i, :] = [ 8.  3. 22. 25.]
259 cord_individual_obj[indivial_i, :] = [ 9.  2. 9. 11.]
260 cord_individual_obj[indivial_i, :] = [10.  3. 29. 32.]
261 cord_individual_obj[indivial_i, :] = [11.  4. 14. 18.]
262 cord_individual_obj[indivial_i, :] = [12.  3. 10. 13.]
263 cord_individual_obj[indivial_i, :] = [13.  3. 65. 68.]
264 cord_individual_obj[indivial_i, :] = [14.  4. 4. 8.]
265 cord_individual_obj[indivial_i, :] = [15.  5. 2. 7.]
266 cord_individual_obj[indivial_i, :] = [16.  3. 71. 74.]
267 cord_individual_obj[indivial_i, :] = [17.  3. 1. 4.]
268 cord_individual_obj[indivial_i, :] = [18.  4. 2. 6.]
269 cord_individual_obj[indivial_i, :] = [19.  4. 28. 32.]
270 cord_individual_obj[indivial_i, :] = [20.  3. 14. 17.]
271 cord_individual_obj[indivial_i, :] = [21.  3. 110. 113.]
272 cord_individual_obj[indivial_i, :] = [22.  3. 72. 75.]
273 cord_individual_obj[indivial_i, :] = [23.  4. 1. 5.]
274 cord_individual_obj[indivial_i, :] = [24.  3. 1. 4.]
275

276 min(cord_individual_obj[:, 3]) = 4.0
277 historl_G_best_iter[iter, 3] = 4.0
278 Begin iteration:
279
280 iter = 8
281 cord_individual_obj[indivial_i, :] = [ 0.  3. 13. 16.]
282 cord_individual_obj[indivial_i, :] = [ 1.  3. 15. 18.]
283 cord_individual_obj[indivial_i, :] = [ 2.  2. 9. 11.]
284 cord_individual_obj[indivial_i, :] = [ 3.  3. 40. 43.]
285 cord_individual_obj[indivial_i, :] = [ 4.  2. 73. 75.]
286 cord_individual_obj[indivial_i, :] = [ 5.  4. 26. 30.]
287 cord_individual_obj[indivial_i, :] = [ 6.  3. 9. 12.]
288 cord_individual_obj[indivial_i, :] = [ 7.  3. 22. 25.]
289 cord_individual_obj[indivial_i, :] = [ 8.  5. 2. 7.]
290 cord_individual_obj[indivial_i, :] = [ 9.  3. 10. 13.]
291 cord_individual_obj[indivial_i, :] = [10.  3. 11. 14.]
292 cord_individual_obj[indivial_i, :] = [11.  4. 14. 18.]
293 cord_individual_obj[indivial_i, :] = [12.  3. 10. 13.]
294 cord_individual_obj[indivial_i, :] = [13.  3. 6. 9.]
295 cord_individual_obj[indivial_i, :] = [14.  4. 1. 5.]
296 cord_individual_obj[indivial_i, :] = [15.  4. 2. 6.]
297 cord_individual_obj[indivial_i, :] = [16.  3. 77. 80.]
298 cord_individual_obj[indivial_i, :] = [17.  4. 41. 45.]
299 cord_individual_obj[indivial_i, :] = [18.  5. 2. 7.]
300 cord_individual_obj[indivial_i, :] = [19.  3. 27. 30.]
301 cord_individual_obj[indivial_i, :] = [20.  3. 10. 13.]
302 cord_individual_obj[indivial_i, :] = [21.  3. 1. 4.]
303 cord_individual_obj[indivial_i, :] = [22.  4. 43. 47.]
304 cord_individual_obj[indivial_i, :] = [23.  3. 37. 40.]
305 cord_individual_obj[indivial_i, :] = [24.  3. 1. 4.]
306

307 min(cord_individual_obj[:, 3]) = 4.0
308 historl_G_best_iter[iter, 3] = 4.0
309 Begin iteration:
310
311 iter = 9
312 cord_individual_obj[indivial_i, :] = [ 0.  3. 25. 28.]
313 cord_individual_obj[indivial_i, :] = [ 1.  3. 13. 16.]
314 cord_individual_obj[indivial_i, :] = [ 2.  3. 1. 4.]
315 cord_individual_obj[indivial_i, :] = [ 3.  2. 5. 7.]
316 cord_individual_obj[indivial_i, :] = [ 4.  2. 9. 11.]
317 cord_individual_obj[indivial_i, :] = [ 5.  4. 2. 6.]
318 cord_individual_obj[indivial_i, :] = [ 6.  2. 9. 11.]
319 cord_individual_obj[indivial_i, :] = [ 7.  4. 2. 6.]
320 cord_individual_obj[indivial_i, :] = [ 8.  5. 2. 7.]
321 cord_individual_obj[indivial_i, :] = [ 9.  3. 2. 5.]
322 cord_individual_obj[indivial_i, :] = [10.  3. 1. 4.]
323 cord_individual_obj[indivial_i, :] = [11.  4. 14. 18.]
324 cord_individual_obj[indivial_i, :] = [12.  4. 2. 6.]
325 cord_individual_obj[indivial_i, :] = [13.  3. 1. 4.]
326 cord_individual_obj[indivial_i, :] = [14.  3. 3. 6.]
327 cord_individual_obj[indivial_i, :] = [15.  3. 58. 61.]
328 cord_individual_obj[indivial_i, :] = [16.  3. 1. 4.]
329 cord_individual_obj[indivial_i, :] = [17.  5. 26. 31.]
330 cord_individual_obj[indivial_i, :] = [18.  3. 1. 4.]
331 cord_individual_obj[indivial_i, :] = [19.  3. 1. 4.]

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332 cord_individual_obj[indivial_i,:] = [20. 3. 10. 13.]
333 cord_individual_obj[indivial_i,:] = [21. 3. 54. 57.]
334 cord_individual_obj[indivial_i,:] = [22. 3. 25. 28.]
335 cord_individual_obj[indivial_i,:] = [23. 3. 58. 61.]
336 cord_individual_obj[indivial_i,:] = [24. 3. 1. 4.]
337
338 min(cord_individual_obj[:,3]) = 4.0
339 histol_G_best_iter[iter,3] = 4.0
340 Begin iteration:
341
342 iter = 10
343 cord_individual_obj[indivial_i,:] = [ 0. 4. 32. 36.]
344 cord_individual_obj[indivial_i,:] = [ 1. 3. 65. 68.]
345 cord_individual_obj[indivial_i,:] = [ 2. 3. 16. 19.]
346 cord_individual_obj[indivial_i,:] = [ 3. 3. 65. 68.]
347 cord_individual_obj[indivial_i,:] = [ 4. 3. 21. 24.]
348 cord_individual_obj[indivial_i,:] = [ 5. 3. 26. 29.]
349 cord_individual_obj[indivial_i,:] = [ 6. 3. 26. 29.]
350 cord_individual_obj[indivial_i,:] = [ 7. 3. 32. 35.]
351 cord_individual_obj[indivial_i,:] = [ 8. 4. 3. 7.]
352 cord_individual_obj[indivial_i,:] = [ 9. 3. 10. 13.]
353 cord_individual_obj[indivial_i,:] = [10. 3. 1. 4.]
354 cord_individual_obj[indivial_i,:] = [11. 3. 13. 16.]
355 cord_individual_obj[indivial_i,:] = [12. 3. 10. 13.]
356 cord_individual_obj[indivial_i,:] = [13. 3. 44. 47.]
357 cord_individual_obj[indivial_i,:] = [14. 3. 2. 5.]
358 cord_individual_obj[indivial_i,:] = [15. 3. 1. 4.]
359 cord_individual_obj[indivial_i,:] = [16. 3. 49. 52.]
360 cord_individual_obj[indivial_i,:] = [17. 3. 66. 69.]
361 cord_individual_obj[indivial_i,:] = [18. 5. 4. 9.]
362 cord_individual_obj[indivial_i,:] = [19. 3. 27. 30.]
363 cord_individual_obj[indivial_i,:] = [20. 2. 55. 57.]
364 cord_individual_obj[indivial_i,:] = [21. 3. 27. 30.]
365 cord_individual_obj[indivial_i,:] = [22. 3. 77. 80.]
366 cord_individual_obj[indivial_i,:] = [23. 2. 22. 24.]
367 cord_individual_obj[indivial_i,:] = [24. 3. 1. 4.]
368
369 min(cord_individual_obj[:,3]) = 4.0
370 histol_G_best_iter[iter,3] = 4.0
371 Begin iteration:
372
373 iter = 11
374 cord_individual_obj[indivial_i,:] = [ 0. 5. 37. 42.]
375 cord_individual_obj[indivial_i,:] = [ 1. 3. 65. 68.]
376 cord_individual_obj[indivial_i,:] = [ 2. 3. 32. 35.]
377 cord_individual_obj[indivial_i,:] = [ 3. 3. 77. 80.]
378 cord_individual_obj[indivial_i,:] = [ 4. 3. 1. 4.]
379 cord_individual_obj[indivial_i,:] = [ 5. 4. 38. 42.]
380 cord_individual_obj[indivial_i,:] = [ 6. 3. 20. 23.]
381 cord_individual_obj[indivial_i,:] = [ 7. 4. 27. 31.]
382 cord_individual_obj[indivial_i,:] = [ 8. 5. 2. 7.]
383 cord_individual_obj[indivial_i,:] = [ 9. 3. 14. 17.]
384 cord_individual_obj[indivial_i,:] = [10. 4. 34. 38.]
385 cord_individual_obj[indivial_i,:] = [11. 3. 77. 80.]
386 cord_individual_obj[indivial_i,:] = [12. 3. 26. 29.]
387 cord_individual_obj[indivial_i,:] = [13. 3. 42. 45.]
388 cord_individual_obj[indivial_i,:] = [14. 3. 22. 25.]
389 cord_individual_obj[indivial_i,:] = [15. 3. 78. 81.]
390 cord_individual_obj[indivial_i,:] = [16. 3. 37. 40.]
391 cord_individual_obj[indivial_i,:] = [17. 3. 37. 40.]
392 cord_individual_obj[indivial_i,:] = [18. 5. 4. 9.]
393 cord_individual_obj[indivial_i,:] = [19. 3. 27. 30.]
394 cord_individual_obj[indivial_i,:] = [20. 3. 16. 19.]
395 cord_individual_obj[indivial_i,:] = [21. 3. 15. 18.]
396 cord_individual_obj[indivial_i,:] = [22. 3. 1. 4.]
397 cord_individual_obj[indivial_i,:] = [23. 4. 54. 58.]
398 cord_individual_obj[indivial_i,:] = [24. 3. 49. 52.]
399
400 min(cord_individual_obj[:,3]) = 4.0
401 histol_G_best_iter[iter,3] = 4.0
402 Begin iteration:
403
404 iter = 12
405 cord_individual_obj[indivial_i,:] = [ 0. 3. 25. 28.]
406 cord_individual_obj[indivial_i,:] = [ 1. 3. 15. 18.]
407 cord_individual_obj[indivial_i,:] = [ 2. 2. 15. 17.]
408 cord_individual_obj[indivial_i,:] = [ 3. 3. 42. 45.]
409 cord_individual_obj[indivial_i,:] = [ 4. 2. 37. 39.]
410 cord_individual_obj[indivial_i,:] = [ 5. 3. 1. 4.]
411 cord_individual_obj[indivial_i,:] = [ 6. 3. 9. 12.]
412 cord_individual_obj[indivial_i,:] = [ 7. 4. 2. 6.]
413 cord_individual_obj[indivial_i,:] = [ 8. 5. 2. 7.]
414 cord_individual_obj[indivial_i,:] = [ 9. 3. 9. 12.]
415 cord_individual_obj[indivial_i,:] = [10. 3. 1. 4.]

```

```

416 cord_individual_obj[indivial_i,:] = [11. 4. 14. 18.]
417 cord_individual_obj[indivial_i,:] = [12. 4. 2. 6.]
418 cord_individual_obj[indivial_i,:] = [13. 2. 14. 16.]
419 cord_individual_obj[indivial_i,:] = [14. 4. 1. 5.]
420 cord_individual_obj[indivial_i,:] = [15. 3. 1. 4.]
421 cord_individual_obj[indivial_i,:] = [16. 3. 68. 71.]
422 cord_individual_obj[indivial_i,:] = [17. 4. 6. 10.]
423 cord_individual_obj[indivial_i,:] = [18. 3. 1. 4.]
424 cord_individual_obj[indivial_i,:] = [19. 3. 27. 30.]
425 cord_individual_obj[indivial_i,:] = [20. 3. 10. 13.]
426 cord_individual_obj[indivial_i,:] = [21. 3. 34. 37.]
427 cord_individual_obj[indivial_i,:] = [22. 5. 34. 39.]
428 cord_individual_obj[indivial_i,:] = [23. 3. 1. 4.]
429 cord_individual_obj[indivial_i,:] = [24. 3. 1. 4.]
430
431 min(cord_individual_obj[:,3]) = 4.0
432 histol_G_best_iter[iter,3] = 4.0
433 Begin iteration:
434
435 iter = 13
436 cord_individual_obj[indivial_i,:] = [0. 3. 1. 4.]
437 cord_individual_obj[indivial_i,:] = [1. 2. 41. 43.]
438 cord_individual_obj[indivial_i,:] = [2. 3. 3. 6.]
439 cord_individual_obj[indivial_i,:] = [3. 3. 9. 12.]
440 cord_individual_obj[indivial_i,:] = [4. 3. 37. 40.]
441 cord_individual_obj[indivial_i,:] = [5. 4. 15. 19.]
442 cord_individual_obj[indivial_i,:] = [6. 2. 6. 8.]
443 cord_individual_obj[indivial_i,:] = [7. 2. 61. 63.]
444 cord_individual_obj[indivial_i,:] = [8. 3. 2. 5.]
445 cord_individual_obj[indivial_i,:] = [9. 4. 3. 7.]
446 cord_individual_obj[indivial_i,:] = [10. 3. 3. 6.]
447 cord_individual_obj[indivial_i,:] = [11. 3. 1. 4.]
448 cord_individual_obj[indivial_i,:] = [12. 3. 10. 13.]
449 cord_individual_obj[indivial_i,:] = [13. 3. 3. 6.]
450 cord_individual_obj[indivial_i,:] = [14. 3. 3. 6.]
451 cord_individual_obj[indivial_i,:] = [15. 3. 42. 45.]
452 cord_individual_obj[indivial_i,:] = [16. 3. 1. 4.]
453 cord_individual_obj[indivial_i,:] = [17. 3. 10. 13.]
454 cord_individual_obj[indivial_i,:] = [18. 5. 2. 7.]
455 cord_individual_obj[indivial_i,:] = [19. 3. 3. 6.]
456 cord_individual_obj[indivial_i,:] = [20. 2. 41. 43.]
457 cord_individual_obj[indivial_i,:] = [21. 3. 32. 35.]
458 cord_individual_obj[indivial_i,:] = [22. 4. 6. 10.]
459 cord_individual_obj[indivial_i,:] = [23. 2. 20. 22.]
460 cord_individual_obj[indivial_i,:] = [24. 3. 3. 6.]
461
462 min(cord_individual_obj[:,3]) = 4.0
463 histol_G_best_iter[iter,3] = 4.0
464 Begin iteration:
465
466 iter = 14
467 cord_individual_obj[indivial_i,:] = [0. 3. 13. 16.]
468 cord_individual_obj[indivial_i,:] = [1. 3. 32. 35.]
469 cord_individual_obj[indivial_i,:] = [2. 3. 10. 13.]
470 cord_individual_obj[indivial_i,:] = [3. 3. 54. 57.]
471 cord_individual_obj[indivial_i,:] = [4. 4. 1. 5.]
472 cord_individual_obj[indivial_i,:] = [5. 4. 14. 18.]
473 cord_individual_obj[indivial_i,:] = [6. 3. 26. 29.]
474 cord_individual_obj[indivial_i,:] = [7. 3. 1. 4.]
475 cord_individual_obj[indivial_i,:] = [8. 3. 1. 4.]
476 cord_individual_obj[indivial_i,:] = [9. 3. 10. 13.]
477 cord_individual_obj[indivial_i,:] = [10. 3. 11. 14.]
478 cord_individual_obj[indivial_i,:] = [11. 4. 14. 18.]
479 cord_individual_obj[indivial_i,:] = [12. 3. 10. 13.]
480 cord_individual_obj[indivial_i,:] = [13. 3. 6. 9.]
481 cord_individual_obj[indivial_i,:] = [14. 4. 4. 8.]
482 cord_individual_obj[indivial_i,:] = [15. 4. 1. 5.]
483 cord_individual_obj[indivial_i,:] = [16. 3. 49. 52.]
484 cord_individual_obj[indivial_i,:] = [17. 3. 12. 15.]
485 cord_individual_obj[indivial_i,:] = [18. 3. 2. 5.]
486 cord_individual_obj[indivial_i,:] = [19. 3. 27. 30.]
487 cord_individual_obj[indivial_i,:] = [20. 3. 18. 21.]
488 cord_individual_obj[indivial_i,:] = [21. 3. 98. 101.]
489 cord_individual_obj[indivial_i,:] = [22. 3. 54. 57.]
490 cord_individual_obj[indivial_i,:] = [23. 4. 1. 5.]
491 cord_individual_obj[indivial_i,:] = [24. 3. 1. 4.]
492
493 min(cord_individual_obj[:,3]) = 4.0
494 histol_G_best_iter[iter,3] = 4.0
495 Begin iteration:
496
497 iter = 15
498 cord_individual_obj[indivial_i,:] = [0. 3. 59. 62.]
499 cord_individual_obj[indivial_i,:] = [1. 3. 38. 41.]

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500 cord_individual_obj[indivial_i, :] = [2, 3, 2, 5.]
501 cord_individual_obj[indivial_i, :] = [3, 3, 97, 100.]
502 cord_individual_obj[indivial_i, :] = [4, 4, 1, 5.]
503 cord_individual_obj[indivial_i, :] = [5, 3, 52, 55.]
504 cord_individual_obj[indivial_i, :] = [6, 2, 20, 22.]
505 cord_individual_obj[indivial_i, :] = [7, 3, 10, 13.]
506 cord_individual_obj[indivial_i, :] = [8, 3, 1, 4.]
507 cord_individual_obj[indivial_i, :] = [9, 3, 2, 5.]
508 cord_individual_obj[indivial_i, :] = [10, 3, 29, 32.]
509 cord_individual_obj[indivial_i, :] = [11, 3, 27, 30.]
510 cord_individual_obj[indivial_i, :] = [12, 3, 2, 5.]
511 cord_individual_obj[indivial_i, :] = [13, 3, 27, 30.]
512 cord_individual_obj[indivial_i, :] = [14, 3, 2, 5.]
513 cord_individual_obj[indivial_i, :] = [15, 3, 22, 25.]
514 cord_individual_obj[indivial_i, :] = [16, 4, 42, 46.]
515 cord_individual_obj[indivial_i, :] = [17, 3, 19, 22.]
516 cord_individual_obj[indivial_i, :] = [18, 5, 4, 9.]
517 cord_individual_obj[indivial_i, :] = [19, 2, 38, 40.]
518 cord_individual_obj[indivial_i, :] = [20, 4, 14, 18.]
519 cord_individual_obj[indivial_i, :] = [21, 3, 1, 4.]
520 cord_individual_obj[indivial_i, :] = [22, 4, 35, 39.]
521 cord_individual_obj[indivial_i, :] = [23, 3, 43, 46.]
522 cord_individual_obj[indivial_i, :] = [24, 4, 30, 34.]
523
524 min(cord_individual_obj[:, 3]) = 4.0
525 histol_G_best_iter[iter, 3] = 4.0
526 Begin iteration:
527
528 iter = 16
529 cord_individual_obj[indivial_i, :] = [0, 5, 18, 23.]
530 cord_individual_obj[indivial_i, :] = [1, 3, 38, 41.]
531 cord_individual_obj[indivial_i, :] = [2, 5, 2, 7.]
532 cord_individual_obj[indivial_i, :] = [3, 3, 1, 4.]
533 cord_individual_obj[indivial_i, :] = [4, 3, 13, 16.]
534 cord_individual_obj[indivial_i, :] = [5, 5, 2, 7.]
535 cord_individual_obj[indivial_i, :] = [6, 4, 3, 7.]
536 cord_individual_obj[indivial_i, :] = [7, 3, 38, 41.]
537 cord_individual_obj[indivial_i, :] = [8, 4, 2, 6.]
538 cord_individual_obj[indivial_i, :] = [9, 4, 1, 5.]
539 cord_individual_obj[indivial_i, :] = [10, 3, 85, 88.]
540 cord_individual_obj[indivial_i, :] = [11, 5, 14, 19.]
541 cord_individual_obj[indivial_i, :] = [12, 3, 10, 13.]
542 cord_individual_obj[indivial_i, :] = [13, 5, 2, 7.]
543 cord_individual_obj[indivial_i, :] = [14, 3, 22, 25.]
544 cord_individual_obj[indivial_i, :] = [15, 2, 21, 23.]
545 cord_individual_obj[indivial_i, :] = [16, 3, 38, 41.]
546 cord_individual_obj[indivial_i, :] = [17, 3, 9, 12.]
547 cord_individual_obj[indivial_i, :] = [18, 2, 31, 33.]
548 cord_individual_obj[indivial_i, :] = [19, 3, 38, 41.]
549 cord_individual_obj[indivial_i, :] = [20, 4, 3, 7.]
550 cord_individual_obj[indivial_i, :] = [21, 3, 27, 30.]
551 cord_individual_obj[indivial_i, :] = [22, 3, 13, 16.]
552 cord_individual_obj[indivial_i, :] = [23, 3, 25, 28.]
553 cord_individual_obj[indivial_i, :] = [24, 2, 55, 57.]
554
555 min(cord_individual_obj[:, 3]) = 4.0
556 histol_G_best_iter[iter, 3] = 4.0
557 Begin iteration:
558
559 iter = 17
560 cord_individual_obj[indivial_i, :] = [0, 5, 58, 63.]
561 cord_individual_obj[indivial_i, :] = [1, 3, 12, 15.]
562 cord_individual_obj[indivial_i, :] = [2, 4, 9, 13.]
563 cord_individual_obj[indivial_i, :] = [3, 4, 38, 42.]
564 cord_individual_obj[indivial_i, :] = [4, 4, 26, 30.]
565 cord_individual_obj[indivial_i, :] = [5, 4, 45, 49.]
566 cord_individual_obj[indivial_i, :] = [6, 4, 2, 6.]
567 cord_individual_obj[indivial_i, :] = [7, 4, 1, 5.]
568 cord_individual_obj[indivial_i, :] = [8, 3, 34, 37.]
569 cord_individual_obj[indivial_i, :] = [9, 3, 1, 4.]
570 cord_individual_obj[indivial_i, :] = [10, 3, 1, 4.]
571 cord_individual_obj[indivial_i, :] = [11, 3, 26, 29.]
572 cord_individual_obj[indivial_i, :] = [12, 3, 16, 19.]
573 cord_individual_obj[indivial_i, :] = [13, 2, 52, 54.]
574 cord_individual_obj[indivial_i, :] = [14, 3, 3, 6.]
575 cord_individual_obj[indivial_i, :] = [15, 5, 2, 7.]
576 cord_individual_obj[indivial_i, :] = [16, 3, 41, 44.]
577 cord_individual_obj[indivial_i, :] = [17, 2, 41, 43.]
578 cord_individual_obj[indivial_i, :] = [18, 4, 14, 18.]
579 cord_individual_obj[indivial_i, :] = [19, 3, 34, 37.]
580 cord_individual_obj[indivial_i, :] = [20, 3, 27, 30.]
581 cord_individual_obj[indivial_i, :] = [21, 3, 50, 53.]
582 cord_individual_obj[indivial_i, :] = [22, 3, 42, 45.]
583 cord_individual_obj[indivial_i, :] = [23, 4, 4, 8.]

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unknown

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584     cord_individual_obj[indivial_i, :] = [24. 2. 9. 11.]
585
586     min(cord_individual_obj[:, 3]) = 4.0
587     historl_G_best_iter[iter, 3] = 4.0
588 Begin iteration:
589
590 iter = 18
591     cord_individual_obj[indivial_i, :] = [0. 3. 1. 4.]
592     cord_individual_obj[indivial_i, :] = [ 1. 3. 109. 112.]
593     cord_individual_obj[indivial_i, :] = [2. 3. 6. 9.]
594     cord_individual_obj[indivial_i, :] = [ 3. 3. 70. 73.]
595     cord_individual_obj[indivial_i, :] = [ 4. 3. 28. 31.]
596     cord_individual_obj[indivial_i, :] = [ 5. 4. 47. 51.]
597     cord_individual_obj[indivial_i, :] = [ 6. 3. 14. 17.]
598     cord_individual_obj[indivial_i, :] = [ 7. 3. 133. 136.]
599     cord_individual_obj[indivial_i, :] = [ 8. 3. 50. 53.]
600     cord_individual_obj[indivial_i, :] = [ 9. 3. 22. 25.]
601     cord_individual_obj[indivial_i, :] = [10. 3. 50. 53.]
602     cord_individual_obj[indivial_i, :] = [11. 4. 27. 31.]
603     cord_individual_obj[indivial_i, :] = [12. 3. 64. 67.]
604     cord_individual_obj[indivial_i, :] = [13. 3. 97. 100.]
605     cord_individual_obj[indivial_i, :] = [14. 3. 6. 9.]
606     cord_individual_obj[indivial_i, :] = [15. 3. 97. 100.]
607     cord_individual_obj[indivial_i, :] = [16. 5. 8. 13.]
608     cord_individual_obj[indivial_i, :] = [17. 3. 64. 67.]
609     cord_individual_obj[indivial_i, :] = [18. 3. 52. 55.]
610     cord_individual_obj[indivial_i, :] = [19. 3. 45. 48.]
611     cord_individual_obj[indivial_i, :] = [20. 3. 6. 9.]
612     cord_individual_obj[indivial_i, :] = [21. 3. 6. 9.]
613     cord_individual_obj[indivial_i, :] = [22. 3. 82. 85.]
614     cord_individual_obj[indivial_i, :] = [23. 3. 6. 9.]
615     cord_individual_obj[indivial_i, :] = [24. 3. 58. 61.]
616
617     min(cord_individual_obj[:, 3]) = 4.0
618     historl_G_best_iter[iter, 3] = 4.0
619 Begin iteration:
620
621 iter = 19
622     cord_individual_obj[indivial_i, :] = [ 0. 3. 50. 53.]
623     cord_individual_obj[indivial_i, :] = [ 1. 3. 121. 124.]
624     cord_individual_obj[indivial_i, :] = [ 2. 2. 18. 20.]
625     cord_individual_obj[indivial_i, :] = [ 3. 2. 73. 75.]
626     cord_individual_obj[indivial_i, :] = [ 4. 3. 62. 65.]
627     cord_individual_obj[indivial_i, :] = [ 5. 4. 19. 23.]
628     cord_individual_obj[indivial_i, :] = [ 6. 4. 82. 86.]
629     cord_individual_obj[indivial_i, :] = [ 7. 3. 1. 4.]
630     cord_individual_obj[indivial_i, :] = [ 8. 3. 32. 35.]
631     cord_individual_obj[indivial_i, :] = [ 9. 3. 22. 25.]
632     cord_individual_obj[indivial_i, :] = [10. 3. 46. 49.]
633     cord_individual_obj[indivial_i, :] = [11. 5. 62. 67.]
634     cord_individual_obj[indivial_i, :] = [12. 4. 67. 71.]
635     cord_individual_obj[indivial_i, :] = [13. 3. 121. 124.]
636     cord_individual_obj[indivial_i, :] = [14. 3. 15. 18.]
637     cord_individual_obj[indivial_i, :] = [15. 4. 150. 154.]
638     cord_individual_obj[indivial_i, :] = [16. 4. 39. 43.]
639     cord_individual_obj[indivial_i, :] = [17. 3. 98. 101.]
640     cord_individual_obj[indivial_i, :] = [18. 3. 32. 35.]
641     cord_individual_obj[indivial_i, :] = [19. 3. 67. 70.]
642     cord_individual_obj[indivial_i, :] = [20. 3. 6. 9.]
643     cord_individual_obj[indivial_i, :] = [21. 3. 18. 21.]
644     cord_individual_obj[indivial_i, :] = [22. 3. 46. 49.]
645     cord_individual_obj[indivial_i, :] = [23. 3. 6. 9.]
646     cord_individual_obj[indivial_i, :] = [24. 3. 46. 49.]
647
648     min(cord_individual_obj[:, 3]) = 4.0
649     historl_G_best_iter[iter, 3] = 4.0
650 Begin iteration:
651
652 iter = 20
653     cord_individual_obj[indivial_i, :] = [ 0. 4. 9. 13.]
654     cord_individual_obj[indivial_i, :] = [ 1. 3. 82. 85.]
655     cord_individual_obj[indivial_i, :] = [ 2. 3. 14. 17.]
656     cord_individual_obj[indivial_i, :] = [ 3. 2. 66. 68.]
657     cord_individual_obj[indivial_i, :] = [ 4. 3. 2. 5.]
658     cord_individual_obj[indivial_i, :] = [ 5. 3. 25. 28.]
659     cord_individual_obj[indivial_i, :] = [ 6. 2. 74. 76.]
660     cord_individual_obj[indivial_i, :] = [ 7. 2. 67. 69.]
661     cord_individual_obj[indivial_i, :] = [ 8. 4. 14. 18.]
662     cord_individual_obj[indivial_i, :] = [ 9. 3. 2. 5.]
663     cord_individual_obj[indivial_i, :] = [10. 3. 1. 4.]
664     cord_individual_obj[indivial_i, :] = [11. 3. 42. 45.]
665     cord_individual_obj[indivial_i, :] = [12. 3. 46. 49.]
666     cord_individual_obj[indivial_i, :] = [13. 5. 60. 65.]
667     cord_individual_obj[indivial_i, :] = [14. 3. 13. 16.]
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668 cord_individual_obj[indivial_i, :] = [15. 3. 1. 4.]
669 cord_individual_obj[indivial_i, :] = [16. 4. 15. 19.]
670 cord_individual_obj[indivial_i, :] = [17. 5. 14. 19.]
671 cord_individual_obj[indivial_i, :] = [18. 5. 15. 20.]
672 cord_individual_obj[indivial_i, :] = [19. 3. 57. 60.]
673 cord_individual_obj[indivial_i, :] = [20. 4. 7. 11.]
674 cord_individual_obj[indivial_i, :] = [21. 3. 14. 17.]
675 cord_individual_obj[indivial_i, :] = [22. 3. 87. 90.]
676 cord_individual_obj[indivial_i, :] = [23. 2. 34. 36.]
677 cord_individual_obj[indivial_i, :] = [24. 4. 26. 30.]
678
679 min(cord_individual_obj[:, 3]) = 4.0
680 historl_G_best_iter[iter, 3] = 4.0
681 Iteration calculate over
682
683
684
685
686 All item are in Bin and:
687 Bin area = 1080
688 Real_area = 71.0
689 Proportion_of_area = 0.06574074074074074
690 BEST_CHROM =
691     berth: [ 4.5 18.5 23.5 23.5 10.5 14.5]
692     time: [0. 0. 0. 1. 0. 0.]
693     num_QC: [6. 3. 5. 3. 3. 3.]
694 Objective function values and some other indicators:
695 Obj0 = 3.00          Obj1 = 1.00          Obj0 + Obj1 = 4.00
696 Total movement of crane: 0.00
697 Total waiting time in berth position: 1.00
698 Total index of q during berthing: 513.00
699 Specific arrangement for each vessel:
700
    V_id: 0      li: 9.0      xi: 4.5      bow of i: 0.0      tail of i: 9.0      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: 160.0      work load_i:
701
    160.0      work load gap_i: 0
    V_id: 1      li: 3.0      xi: 18.5      bow of i: 17.0      tail of i: 20.0      gama_i0: 0.0      gama_i1: 2
    .           gama_i1 + 1: 3.0      .           gama_i1 - gama_i0: 2.0      .           duration_time_i: 3.0      demand_i: 160.0      work
    load_i: 160.0      work load gap_i: 0
    V_id: 2      li: 7.0      xi: 23.5      bow of i: 20.0      tail of i: 27.0      gama_i0: 0.0      gama_i1: 0
    .           gama_i1 + 1: 1.0      .           gama_i1 - gama_i0: 0.0      .           duration_time_i: 1.0      demand_i: 60.0      work
    load_i: 60.0      work load gap_i: 0
    V_id: 3      li: 7.0      xi: 23.5      bow of i: 20.0      tail of i: 27.0      gama_i0: 1.0      gama_i1: 3
    .           gama_i1 + 1: 4.0      .           gama_i1 - gama_i0: 2.0      .           duration_time_i: 3.0      demand_i: 160.0      work
    load_i: 160.0      work load gap_i: 0
    V_id: 4      li: 3.0      xi: 10.5      bow of i: 9.0      tail of i: 12.0      gama_i0: 0.0      gama_i1: 1
    .           gama_i1 + 1: 2.0      .           gama_i1 - gama_i0: 1.0      .           duration_time_i: 2.0      demand_i: 120.0      work
    load_i: 120.0      work load gap_i: 0
    V_id: 5      li: 5.0      xi: 14.5      bow of i: 12.0      tail of i: 17.0      gama_i0: 0.0      gama_i1: 1
    .           gama_i1 + 1: 2.0      .           gama_i1 - gama_i0: 1.0      .           duration_time_i: 2.0      demand_i: 100.0      work
    load_i: 100.0      work load gap_i: 0
702
703 Algorithm finished and the total CPU time: 163 s
704 End
705
706
707
708
709

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