

unknown

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80 cord_individual_obj[indivial_i,:] = [16. 5. 33. 38.]
81 cord_individual_obj[indivial_i,:] = [17. 5. 12. 17.]
82 cord_individual_obj[indivial_i,:] = [18. 5. 48. 53.]
83 cord_individual_obj[indivial_i,:] = [19. 5. 42. 47.]
84 cord_individual_obj[indivial_i,:] = [20. 5. 37. 42.]
85 cord_individual_obj[indivial_i,:] = [21. 4. 36. 40.]
86 cord_individual_obj[indivial_i,:] = [22. 4. 44. 48.]
87 cord_individual_obj[indivial_i,:] = [23. 6. 55. 61.]
88 cord_individual_obj[indivial_i,:] = [24. 3. 75. 78.]
89
90 min(cord_individual_obj[:,3]) = 15.0
91 historl_G_best_iter[iter, 3] = 15.0
92 Begin iteration:
93
94 iter = 2
95 cord_individual_obj[indivial_i,:] = [ 0. 4. 31. 35.]
96 cord_individual_obj[indivial_i,:] = [ 1. 6. 62. 68.]
97 cord_individual_obj[indivial_i,:] = [ 2. 5. 23. 28.]
98 cord_individual_obj[indivial_i,:] = [ 3. 4. 61. 65.]
99 cord_individual_obj[indivial_i,:] = [ 4. 7. 52. 59.]
100 cord_individual_obj[indivial_i,:] = [ 5. 7. 16. 23.]
101 cord_individual_obj[indivial_i,:] = [ 6. 6. 22. 28.]
102 cord_individual_obj[indivial_i,:] = [ 7. 5. 33. 38.]
103 cord_individual_obj[indivial_i,:] = [ 8. 6. 15. 21.]
104 cord_individual_obj[indivial_i,:] = [ 9. 6. 33. 39.]
105 cord_individual_obj[indivial_i,:] = [10. 4. 25. 29.]
106 cord_individual_obj[indivial_i,:] = [11. 5. 60. 65.]
107 cord_individual_obj[indivial_i,:] = [12. 3. 40. 43.]
108 cord_individual_obj[indivial_i,:] = [13. 5. 10. 15.]
109 cord_individual_obj[indivial_i,:] = [14. 4. 14. 18.]
110 cord_individual_obj[indivial_i,:] = [15. 5. 55. 60.]
111 cord_individual_obj[indivial_i,:] = [16. 6. 33. 39.]
112 cord_individual_obj[indivial_i,:] = [17. 5. 16. 21.]
113 cord_individual_obj[indivial_i,:] = [18. 5. 51. 56.]
114 cord_individual_obj[indivial_i,:] = [19. 5. 25. 30.]
115 cord_individual_obj[indivial_i,:] = [20. 4. 34. 38.]
116 cord_individual_obj[indivial_i,:] = [21. 5. 36. 41.]
117 cord_individual_obj[indivial_i,:] = [22. 3. 47. 50.]
118 cord_individual_obj[indivial_i,:] = [23. 5. 18. 23.]
119 cord_individual_obj[indivial_i,:] = [24. 5. 54. 59.]
120
121 min(cord_individual_obj[:,3]) = 15.0
122 historl_G_best_iter[iter, 3] = 15.0
123 Begin iteration:
124
125 iter = 3
126 cord_individual_obj[indivial_i,:] = [ 0. 6. 46. 52.]
127 cord_individual_obj[indivial_i,:] = [ 1. 5. 10. 15.]
128 cord_individual_obj[indivial_i,:] = [ 2. 5. 63. 68.]
129 cord_individual_obj[indivial_i,:] = [ 3. 5. 22. 27.]
130 cord_individual_obj[indivial_i,:] = [ 4. 6. 12. 18.]
131 cord_individual_obj[indivial_i,:] = [ 5. 5. 54. 59.]
132 cord_individual_obj[indivial_i,:] = [ 6. 5. 56. 61.]
133 cord_individual_obj[indivial_i,:] = [ 7. 4. 31. 35.]
134 cord_individual_obj[indivial_i,:] = [ 8. 5. 22. 27.]
135 cord_individual_obj[indivial_i,:] = [ 9. 6. 28. 34.]
136 cord_individual_obj[indivial_i,:] = [10. 5. 22. 27.]
137 cord_individual_obj[indivial_i,:] = [11. 5. 35. 40.]
138 cord_individual_obj[indivial_i,:] = [12. 5. 60. 65.]
139 cord_individual_obj[indivial_i,:] = [13. 5. 70. 75.]
140 cord_individual_obj[indivial_i,:] = [14. 7. 28. 35.]
141 cord_individual_obj[indivial_i,:] = [15. 4. 48. 52.]
142 cord_individual_obj[indivial_i,:] = [16. 6. 50. 56.]
143 cord_individual_obj[indivial_i,:] = [17. 5. 49. 54.]
144 cord_individual_obj[indivial_i,:] = [18. 5. 16. 21.]
145 cord_individual_obj[indivial_i,:] = [19. 6. 39. 45.]
146 cord_individual_obj[indivial_i,:] = [20. 4. 40. 44.]
147 cord_individual_obj[indivial_i,:] = [21. 5. 18. 23.]
148 cord_individual_obj[indivial_i,:] = [22. 4. 37. 41.]
149 cord_individual_obj[indivial_i,:] = [23. 5. 9. 14.]
150 cord_individual_obj[indivial_i,:] = [24. 5. 56. 61.]
151
152 min(cord_individual_obj[:,3]) = 14.0
153 historl_G_best_iter[iter, 3] = 14.0
154 Begin iteration:
155
156 iter = 4
157 cord_individual_obj[indivial_i,:] = [ 0. 6. 68. 74.]
158 cord_individual_obj[indivial_i,:] = [ 1. 3. 41. 44.]
159 cord_individual_obj[indivial_i,:] = [ 2. 6. 90. 96.]
160 cord_individual_obj[indivial_i,:] = [ 3. 5. 63. 68.]
161 cord_individual_obj[indivial_i,:] = [ 4. 4. 76. 80.]
162 cord_individual_obj[indivial_i,:] = [ 5. 5. 24. 29.]
163 cord_individual_obj[indivial_i,:] = [ 6. 6. 82. 88.]

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164 cord_individual_obj[indivial_i, :] = [ 7. 4. 55. 59.]
165 cord_individual_obj[indivial_i, :] = [ 8. 4. 28. 32.]
166 cord_individual_obj[indivial_i, :] = [ 9. 3. 63. 66.]
167 cord_individual_obj[indivial_i, :] = [10. 7. 14. 21.]
168 cord_individual_obj[indivial_i, :] = [11. 5. 50. 55.]
169 cord_individual_obj[indivial_i, :] = [12. 3. 41. 44.]
170 cord_individual_obj[indivial_i, :] = [13. 5. 9. 14.]
171 cord_individual_obj[indivial_i, :] = [14. 4. 17. 21.]
172 cord_individual_obj[indivial_i, :] = [15. 5. 49. 54.]
173 cord_individual_obj[indivial_i, :] = [16. 4. 66. 70.]
174 cord_individual_obj[indivial_i, :] = [17. 4. 35. 39.]
175 cord_individual_obj[indivial_i, :] = [18. 3. 51. 54.]
176 cord_individual_obj[indivial_i, :] = [19. 3. 60. 63.]
177 cord_individual_obj[indivial_i, :] = [20. 4. 19. 23.]
178 cord_individual_obj[indivial_i, :] = [21. 3. 63. 66.]
179 cord_individual_obj[indivial_i, :] = [22. 5. 55. 60.]
180 cord_individual_obj[indivial_i, :] = [23. 4. 31. 35.]
181 cord_individual_obj[indivial_i, :] = [24. 4. 26. 30.]
182
183 min(cord_individual_obj[:, 3]) = 14.0
184 historl_G_best_iter[iter, 3] = 14.0
185 Begin iteration:
186
187 iter = 5
188 cord_individual_obj[indivial_i, :] = [ 0. 4. 39. 43.]
189 cord_individual_obj[indivial_i, :] = [ 1. 5. 34. 39.]
190 cord_individual_obj[indivial_i, :] = [ 2. 5. 9. 14.]
191 cord_individual_obj[indivial_i, :] = [ 3. 4. 52. 56.]
192 cord_individual_obj[indivial_i, :] = [ 4. 5. 61. 66.]
193 cord_individual_obj[indivial_i, :] = [ 5. 4. 18. 22.]
194 cord_individual_obj[indivial_i, :] = [ 6. 5. 63. 68.]
195 cord_individual_obj[indivial_i, :] = [ 7. 3. 76. 79.]
196 cord_individual_obj[indivial_i, :] = [ 8. 4. 28. 32.]
197 cord_individual_obj[indivial_i, :] = [ 9. 5. 15. 20.]
198 cord_individual_obj[indivial_i, :] = [10. 5. 26. 31.]
199 cord_individual_obj[indivial_i, :] = [11. 4. 98. 102.]
200 cord_individual_obj[indivial_i, :] = [12. 5. 76. 81.]
201 cord_individual_obj[indivial_i, :] = [13. 5. 96. 101.]
202 cord_individual_obj[indivial_i, :] = [14. 5. 67. 72.]
203 cord_individual_obj[indivial_i, :] = [15. 5. 77. 82.]
204 cord_individual_obj[indivial_i, :] = [16. 4. 65. 69.]
205 cord_individual_obj[indivial_i, :] = [17. 5. 16. 21.]
206 cord_individual_obj[indivial_i, :] = [18. 5. 50. 55.]
207 cord_individual_obj[indivial_i, :] = [19. 5. 13. 18.]
208 cord_individual_obj[indivial_i, :] = [20. 5. 42. 47.]
209 cord_individual_obj[indivial_i, :] = [21. 4. 18. 22.]
210 cord_individual_obj[indivial_i, :] = [22. 3. 8. 11.]
211 cord_individual_obj[indivial_i, :] = [23. 5. 69. 74.]
212 cord_individual_obj[indivial_i, :] = [24. 5. 48. 53.]
213
214 min(cord_individual_obj[:, 3]) = 11.0
215 historl_G_best_iter[iter, 3] = 11.0
216 Begin iteration:
217
218 iter = 6
219 cord_individual_obj[indivial_i, :] = [ 0. 7. 47. 54.]
220 cord_individual_obj[indivial_i, :] = [ 1. 4. 71. 75.]
221 cord_individual_obj[indivial_i, :] = [ 2. 6. 13. 19.]
222 cord_individual_obj[indivial_i, :] = [ 3. 7. 34. 41.]
223 cord_individual_obj[indivial_i, :] = [ 4. 5. 44. 49.]
224 cord_individual_obj[indivial_i, :] = [ 5. 5. 57. 62.]
225 cord_individual_obj[indivial_i, :] = [ 6. 5. 9. 14.]
226 cord_individual_obj[indivial_i, :] = [ 7. 5. 65. 70.]
227 cord_individual_obj[indivial_i, :] = [ 8. 4. 9. 13.]
228 cord_individual_obj[indivial_i, :] = [ 9. 5. 55. 60.]
229 cord_individual_obj[indivial_i, :] = [10. 5. 44. 49.]
230 cord_individual_obj[indivial_i, :] = [11. 3. 8. 11.]
231 cord_individual_obj[indivial_i, :] = [12. 6. 49. 55.]
232 cord_individual_obj[indivial_i, :] = [13. 6. 29. 35.]
233 cord_individual_obj[indivial_i, :] = [14. 5. 41. 46.]
234 cord_individual_obj[indivial_i, :] = [15. 4. 23. 27.]
235 cord_individual_obj[indivial_i, :] = [16. 7. 38. 45.]
236 cord_individual_obj[indivial_i, :] = [17. 6. 41. 47.]
237 cord_individual_obj[indivial_i, :] = [18. 5. 17. 22.]
238 cord_individual_obj[indivial_i, :] = [19. 6. 44. 50.]
239 cord_individual_obj[indivial_i, :] = [20. 5. 54. 59.]
240 cord_individual_obj[indivial_i, :] = [21. 7. 36. 43.]
241 cord_individual_obj[indivial_i, :] = [22. 4. 101. 105.]
242 cord_individual_obj[indivial_i, :] = [23. 5. 51. 56.]
243 cord_individual_obj[indivial_i, :] = [24. 5. 9. 14.]
244
245 min(cord_individual_obj[:, 3]) = 11.0
246 historl_G_best_iter[iter, 3] = 11.0
247 Begin iteration:

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248
249 iter = 7
250 cord_individual_obj[indivial_i, :] = [ 0.  4. 14. 18.]
251 cord_individual_obj[indivial_i, :] = [ 1.  5. 57. 62.]
252 cord_individual_obj[indivial_i, :] = [ 2.  5. 21. 26.]
253 cord_individual_obj[indivial_i, :] = [ 3.  5. 57. 62.]
254 cord_individual_obj[indivial_i, :] = [ 4.  5. 36. 41.]
255 cord_individual_obj[indivial_i, :] = [ 5.  6. 83. 89.]
256 cord_individual_obj[indivial_i, :] = [ 6.  5. 14. 19.]
257 cord_individual_obj[indivial_i, :] = [ 7.  4. 42. 46.]
258 cord_individual_obj[indivial_i, :] = [ 8.  5. 38. 43.]
259 cord_individual_obj[indivial_i, :] = [ 9.  4. 21. 25.]
260 cord_individual_obj[indivial_i, :] = [10.  7. 48. 55.]
261 cord_individual_obj[indivial_i, :] = [11.  5. 43. 48.]
262 cord_individual_obj[indivial_i, :] = [12.  6. 11. 17.]
263 cord_individual_obj[indivial_i, :] = [13.  5. 23. 28.]
264 cord_individual_obj[indivial_i, :] = [14.  5. 36. 41.]
265 cord_individual_obj[indivial_i, :] = [15.  3. 130. 133.]
266 cord_individual_obj[indivial_i, :] = [16.  5. 57. 62.]
267 cord_individual_obj[indivial_i, :] = [17.  4. 25. 29.]
268 cord_individual_obj[indivial_i, :] = [18.  7. 43. 50.]
269 cord_individual_obj[indivial_i, :] = [19.  6. 39. 45.]
270 cord_individual_obj[indivial_i, :] = [20.  5. 38. 43.]
271 cord_individual_obj[indivial_i, :] = [21.  5. 38. 43.]
272 cord_individual_obj[indivial_i, :] = [22.  3. 8. 11.]
273 cord_individual_obj[indivial_i, :] = [23.  6. 129. 135.]
274 cord_individual_obj[indivial_i, :] = [24.  4. 47. 51.]
275

276 min(cord_individual_obj[:, 3]) = 11.0
277 historl_G_best_iter[iter, 3] = 11.0
278 Begin iteration:
279
280 iter = 8
281 cord_individual_obj[indivial_i, :] = [ 0.  4. 100. 104.]
282 cord_individual_obj[indivial_i, :] = [ 1.  5. 22. 27.]
283 cord_individual_obj[indivial_i, :] = [ 2.  5. 20. 25.]
284 cord_individual_obj[indivial_i, :] = [ 3.  5. 16. 21.]
285 cord_individual_obj[indivial_i, :] = [ 4.  5. 56. 61.]
286 cord_individual_obj[indivial_i, :] = [ 5.  6. 100. 106.]
287 cord_individual_obj[indivial_i, :] = [ 6.  5. 22. 27.]
288 cord_individual_obj[indivial_i, :] = [ 7.  5. 58. 63.]
289 cord_individual_obj[indivial_i, :] = [ 8.  4. 26. 30.]
290 cord_individual_obj[indivial_i, :] = [ 9.  5. 18. 23.]
291 cord_individual_obj[indivial_i, :] = [10.  5. 36. 41.]
292 cord_individual_obj[indivial_i, :] = [11.  4. 43. 47.]
293 cord_individual_obj[indivial_i, :] = [12.  6. 10. 16.]
294 cord_individual_obj[indivial_i, :] = [13.  7. 30. 37.]
295 cord_individual_obj[indivial_i, :] = [14.  6. 42. 48.]
296 cord_individual_obj[indivial_i, :] = [15.  4. 58. 62.]
297 cord_individual_obj[indivial_i, :] = [16.  5. 15. 20.]
298 cord_individual_obj[indivial_i, :] = [17.  5. 16. 21.]
299 cord_individual_obj[indivial_i, :] = [18.  7. 53. 60.]
300 cord_individual_obj[indivial_i, :] = [19.  6. 31. 37.]
301 cord_individual_obj[indivial_i, :] = [20.  5. 44. 49.]
302 cord_individual_obj[indivial_i, :] = [21.  5. 45. 50.]
303 cord_individual_obj[indivial_i, :] = [22.  4. 89. 93.]
304 cord_individual_obj[indivial_i, :] = [23.  3. 8. 11.]
305 cord_individual_obj[indivial_i, :] = [24.  3. 8. 11.]
306

307 min(cord_individual_obj[:, 3]) = 11.0
308 historl_G_best_iter[iter, 3] = 11.0
309 Begin iteration:
310
311 iter = 9
312 cord_individual_obj[indivial_i, :] = [ 0.  6. 61. 67.]
313 cord_individual_obj[indivial_i, :] = [ 1.  5. 23. 28.]
314 cord_individual_obj[indivial_i, :] = [ 2.  5. 20. 25.]
315 cord_individual_obj[indivial_i, :] = [ 3.  6. 25. 31.]
316 cord_individual_obj[indivial_i, :] = [ 4.  5. 45. 50.]
317 cord_individual_obj[indivial_i, :] = [ 5.  3. 8. 11.]
318 cord_individual_obj[indivial_i, :] = [ 6.  6. 10. 16.]
319 cord_individual_obj[indivial_i, :] = [ 7.  4. 42. 46.]
320 cord_individual_obj[indivial_i, :] = [ 8.  4. 22. 26.]
321 cord_individual_obj[indivial_i, :] = [ 9.  5. 54. 59.]
322 cord_individual_obj[indivial_i, :] = [10.  5. 49. 54.]
323 cord_individual_obj[indivial_i, :] = [11.  5. 43. 48.]
324 cord_individual_obj[indivial_i, :] = [12.  5. 10. 15.]
325 cord_individual_obj[indivial_i, :] = [13.  5. 26. 31.]
326 cord_individual_obj[indivial_i, :] = [14.  5. 43. 48.]
327 cord_individual_obj[indivial_i, :] = [15.  5. 91. 96.]
328 cord_individual_obj[indivial_i, :] = [16.  3. 15. 18.]
329 cord_individual_obj[indivial_i, :] = [17.  4. 25. 29.]
330 cord_individual_obj[indivial_i, :] = [18.  5. 18. 23.]
331 cord_individual_obj[indivial_i, :] = [19.  8. 31. 39.]

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332 cord_individual_obj[indivial_i,:] = [20. 5. 54. 59.]
333 cord_individual_obj[indivial_i,:] = [21. 5. 28. 33.]
334 cord_individual_obj[indivial_i,:] = [22. 4. 39. 43.]
335 cord_individual_obj[indivial_i,:] = [23. 3. 117. 120.]
336 cord_individual_obj[indivial_i,:] = [24. 7. 78. 85.]
337
338 min(cord_individual_obj[:,3]) = 11.0
339 histol_G_best_iter[iter,3] = 11.0
340 Begin iteration:
341
342 iter = 10
343 cord_individual_obj[indivial_i,:] = [ 0. 6. 64. 70.]
344 cord_individual_obj[indivial_i,:] = [ 1. 4. 71. 75.]
345 cord_individual_obj[indivial_i,:] = [ 2. 6. 13. 19.]
346 cord_individual_obj[indivial_i,:] = [ 3. 5. 38. 43.]
347 cord_individual_obj[indivial_i,:] = [ 4. 6. 22. 28.]
348 cord_individual_obj[indivial_i,:] = [ 5. 5. 7. 12.]
349 cord_individual_obj[indivial_i,:] = [ 6. 5. 9. 14.]
350 cord_individual_obj[indivial_i,:] = [ 7. 5. 51. 56.]
351 cord_individual_obj[indivial_i,:] = [ 8. 5. 46. 51.]
352 cord_individual_obj[indivial_i,:] = [ 9. 4. 17. 21.]
353 cord_individual_obj[indivial_i,:] = [10. 7. 53. 60.]
354 cord_individual_obj[indivial_i,:] = [11. 4. 23. 27.]
355 cord_individual_obj[indivial_i,:] = [12. 6. 10. 16.]
356 cord_individual_obj[indivial_i,:] = [13. 6. 29. 35.]
357 cord_individual_obj[indivial_i,:] = [14. 5. 44. 49.]
358 cord_individual_obj[indivial_i,:] = [15. 5. 23. 28.]
359 cord_individual_obj[indivial_i,:] = [16. 5. 15. 20.]
360 cord_individual_obj[indivial_i,:] = [17. 5. 17. 22.]
361 cord_individual_obj[indivial_i,:] = [18. 3. 18. 21.]
362 cord_individual_obj[indivial_i,:] = [19. 6. 44. 50.]
363 cord_individual_obj[indivial_i,:] = [20. 5. 54. 59.]
364 cord_individual_obj[indivial_i,:] = [21. 6. 62. 68.]
365 cord_individual_obj[indivial_i,:] = [22. 5. 20. 25.]
366 cord_individual_obj[indivial_i,:] = [23. 3. 8. 11.]
367 cord_individual_obj[indivial_i,:] = [24. 6. 10. 16.]
368
369 min(cord_individual_obj[:,3]) = 11.0
370 histol_G_best_iter[iter,3] = 11.0
371 Begin iteration:
372
373 iter = 11
374 cord_individual_obj[indivial_i,:] = [ 0. 4. 60. 64.]
375 cord_individual_obj[indivial_i,:] = [ 1. 3. 8. 11.]
376 cord_individual_obj[indivial_i,:] = [ 2. 4. 26. 30.]
377 cord_individual_obj[indivial_i,:] = [ 3. 5. 13. 18.]
378 cord_individual_obj[indivial_i,:] = [ 4. 4. 60. 64.]
379 cord_individual_obj[indivial_i,:] = [ 5. 4. 40. 44.]
380 cord_individual_obj[indivial_i,:] = [ 6. 5. 44. 49.]
381 cord_individual_obj[indivial_i,:] = [ 7. 5. 46. 51.]
382 cord_individual_obj[indivial_i,:] = [ 8. 5. 31. 36.]
383 cord_individual_obj[indivial_i,:] = [ 9. 4. 42. 46.]
384 cord_individual_obj[indivial_i,:] = [10. 4. 55. 59.]
385 cord_individual_obj[indivial_i,:] = [11. 5. 153. 158.]
386 cord_individual_obj[indivial_i,:] = [12. 6. 72. 78.]
387 cord_individual_obj[indivial_i,:] = [13. 4. 20. 24.]
388 cord_individual_obj[indivial_i,:] = [14. 5. 75. 80.]
389 cord_individual_obj[indivial_i,:] = [15. 4. 58. 62.]
390 cord_individual_obj[indivial_i,:] = [16. 4. 15. 19.]
391 cord_individual_obj[indivial_i,:] = [17. 6. 81. 87.]
392 cord_individual_obj[indivial_i,:] = [18. 4. 33. 37.]
393 cord_individual_obj[indivial_i,:] = [19. 4. 25. 29.]
394 cord_individual_obj[indivial_i,:] = [20. 4. 77. 81.]
395 cord_individual_obj[indivial_i,:] = [21. 4. 7. 11.]
396 cord_individual_obj[indivial_i,:] = [22. 5. 60. 65.]
397 cord_individual_obj[indivial_i,:] = [23. 5. 55. 60.]
398 cord_individual_obj[indivial_i,:] = [24. 6. 64. 70.]
399
400 min(cord_individual_obj[:,3]) = 11.0
401 histol_G_best_iter[iter,3] = 11.0
402 Begin iteration:
403
404 iter = 12
405 cord_individual_obj[indivial_i,:] = [ 0. 4. 31. 35.]
406 cord_individual_obj[indivial_i,:] = [ 1. 6. 73. 79.]
407 cord_individual_obj[indivial_i,:] = [ 2. 5. 29. 34.]
408 cord_individual_obj[indivial_i,:] = [ 3. 6. 24. 30.]
409 cord_individual_obj[indivial_i,:] = [ 4. 5. 54. 59.]
410 cord_individual_obj[indivial_i,:] = [ 5. 6. 88. 94.]
411 cord_individual_obj[indivial_i,:] = [ 6. 4. 19. 23.]
412 cord_individual_obj[indivial_i,:] = [ 7. 4. 41. 45.]
413 cord_individual_obj[indivial_i,:] = [ 8. 4. 60. 64.]
414 cord_individual_obj[indivial_i,:] = [ 9. 5. 42. 47.]
415 cord_individual_obj[indivial_i,:] = [10. 4. 52. 56.]

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416 cord_individual_obj[indivial_i,:] = [11. 3. 8. 11.]
417 cord_individual_obj[indivial_i,:] = [12. 4. 43. 47.]
418 cord_individual_obj[indivial_i,:] = [13. 4. 27. 31.]
419 cord_individual_obj[indivial_i,:] = [14. 4. 38. 42.]
420 cord_individual_obj[indivial_i,:] = [15. 3. 67. 70.]
421 cord_individual_obj[indivial_i,:] = [16. 5. 60. 65.]
422 cord_individual_obj[indivial_i,:] = [17. 3. 51. 54.]
423 cord_individual_obj[indivial_i,:] = [18. 4. 16. 20.]
424 cord_individual_obj[indivial_i,:] = [19. 4. 29. 33.]
425 cord_individual_obj[indivial_i,:] = [20. 3. 30. 33.]
426 cord_individual_obj[indivial_i,:] = [21. 3. 54. 57.]
427 cord_individual_obj[indivial_i,:] = [22. 6. 37. 43.]
428 cord_individual_obj[indivial_i,:] = [23. 6. 12. 18.]
429 cord_individual_obj[indivial_i,:] = [24. 4. 7. 11.]
430
431 min(cord_individual_obj[:,3]) = 11.0
432 histol_G_best_iter[iter,3] = 11.0
433 Begin iteration:
434
435 iter = 13
436 cord_individual_obj[indivial_i,:] = [ 0. 6. 21. 27.]
437 cord_individual_obj[indivial_i,:] = [ 1. 4. 70. 74.]
438 cord_individual_obj[indivial_i,:] = [ 2. 4. 17. 21.]
439 cord_individual_obj[indivial_i,:] = [ 3. 5. 25. 30.]
440 cord_individual_obj[indivial_i,:] = [ 4. 5. 33. 38.]
441 cord_individual_obj[indivial_i,:] = [ 5. 3. 8. 11.]
442 cord_individual_obj[indivial_i,:] = [ 6. 5. 22. 27.]
443 cord_individual_obj[indivial_i,:] = [ 7. 4. 64. 68.]
444 cord_individual_obj[indivial_i,:] = [ 8. 4. 38. 42.]
445 cord_individual_obj[indivial_i,:] = [ 9. 6. 25. 31.]
446 cord_individual_obj[indivial_i,:] = [10. 6. 73. 79.]
447 cord_individual_obj[indivial_i,:] = [11. 5. 43. 48.]
448 cord_individual_obj[indivial_i,:] = [12. 7. 34. 41.]
449 cord_individual_obj[indivial_i,:] = [13. 5. 49. 54.]
450 cord_individual_obj[indivial_i,:] = [14. 4. 50. 54.]
451 cord_individual_obj[indivial_i,:] = [15. 4. 51. 55.]
452 cord_individual_obj[indivial_i,:] = [16. 6. 31. 37.]
453 cord_individual_obj[indivial_i,:] = [17. 4. 84. 88.]
454 cord_individual_obj[indivial_i,:] = [18. 4. 75. 79.]
455 cord_individual_obj[indivial_i,:] = [19. 7. 36. 43.]
456 cord_individual_obj[indivial_i,:] = [20. 4. 9. 13.]
457 cord_individual_obj[indivial_i,:] = [21. 6. 71. 77.]
458 cord_individual_obj[indivial_i,:] = [22. 4. 75. 79.]
459 cord_individual_obj[indivial_i,:] = [23. 5. 42. 47.]
460 cord_individual_obj[indivial_i,:] = [24. 7. 46. 53.]
461
462 min(cord_individual_obj[:,3]) = 11.0
463 histol_G_best_iter[iter,3] = 11.0
464 Begin iteration:
465
466 iter = 14
467 cord_individual_obj[indivial_i,:] = [ 0. 4. 14. 18.]
468 cord_individual_obj[indivial_i,:] = [ 1. 6. 73. 79.]
469 cord_individual_obj[indivial_i,:] = [ 2. 6. 13. 19.]
470 cord_individual_obj[indivial_i,:] = [ 3. 5. 11. 16.]
471 cord_individual_obj[indivial_i,:] = [ 4. 5. 48. 53.]
472 cord_individual_obj[indivial_i,:] = [ 5. 5. 24. 29.]
473 cord_individual_obj[indivial_i,:] = [ 6. 5. 14. 19.]
474 cord_individual_obj[indivial_i,:] = [ 7. 4. 64. 68.]
475 cord_individual_obj[indivial_i,:] = [ 8. 5. 46. 51.]
476 cord_individual_obj[indivial_i,:] = [ 9. 5. 55. 60.]
477 cord_individual_obj[indivial_i,:] = [10. 4. 50. 54.]
478 cord_individual_obj[indivial_i,:] = [11. 5. 43. 48.]
479 cord_individual_obj[indivial_i,:] = [12. 7. 14. 21.]
480 cord_individual_obj[indivial_i,:] = [13. 7. 45. 52.]
481 cord_individual_obj[indivial_i,:] = [14. 5. 44. 49.]
482 cord_individual_obj[indivial_i,:] = [15. 5. 23. 28.]
483 cord_individual_obj[indivial_i,:] = [16. 5. 44. 49.]
484 cord_individual_obj[indivial_i,:] = [17. 3. 8. 11.]
485 cord_individual_obj[indivial_i,:] = [18. 5. 18. 23.]
486 cord_individual_obj[indivial_i,:] = [19. 6. 51. 57.]
487 cord_individual_obj[indivial_i,:] = [20. 5. 54. 59.]
488 cord_individual_obj[indivial_i,:] = [21. 4. 62. 66.]
489 cord_individual_obj[indivial_i,:] = [22. 5. 82. 87.]
490 cord_individual_obj[indivial_i,:] = [23. 3. 117. 120.]
491 cord_individual_obj[indivial_i,:] = [24. 5. 9. 14.]
492
493 min(cord_individual_obj[:,3]) = 11.0
494 histol_G_best_iter[iter,3] = 11.0
495 Begin iteration:
496
497 iter = 15
498 cord_individual_obj[indivial_i,:] = [ 0. 4. 90. 94.]
499 cord_individual_obj[indivial_i,:] = [ 1. 4. 91. 95.]

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500 cord_individual_obj[indivial_i,:] = [ 2. 5. 65. 70.]
501 cord_individual_obj[indivial_i,:] = [ 3. 5. 19. 24.]
502 cord_individual_obj[indivial_i,:] = [ 4. 5. 25. 30.]
503 cord_individual_obj[indivial_i,:] = [ 5. 4. 59. 63.]
504 cord_individual_obj[indivial_i,:] = [ 6. 4. 51. 55.]
505 cord_individual_obj[indivial_i,:] = [ 7. 5. 18. 23.]
506 cord_individual_obj[indivial_i,:] = [ 8. 3. 29. 32.]
507 cord_individual_obj[indivial_i,:] = [ 9. 6. 14. 20.]
508 cord_individual_obj[indivial_i,:] = [10. 4. 54. 58.]
509 cord_individual_obj[indivial_i,:] = [11. 6. 104. 110.]
510 cord_individual_obj[indivial_i,:] = [12. 4. 12. 16.]
511 cord_individual_obj[indivial_i,:] = [13. 6. 38. 44.]
512 cord_individual_obj[indivial_i,:] = [14. 3. 70. 73.]
513 cord_individual_obj[indivial_i,:] = [15. 3. 71. 74.]
514 cord_individual_obj[indivial_i,:] = [16. 5. 38. 43.]
515 cord_individual_obj[indivial_i,:] = [17. 4. 22. 26.]
516 cord_individual_obj[indivial_i,:] = [18. 4. 57. 61.]
517 cord_individual_obj[indivial_i,:] = [19. 5. 70. 75.]
518 cord_individual_obj[indivial_i,:] = [20. 3. 31. 34.]
519 cord_individual_obj[indivial_i,:] = [21. 4. 9. 13.]
520 cord_individual_obj[indivial_i,:] = [22. 3. 40. 43.]
521 cord_individual_obj[indivial_i,:] = [23. 3. 8. 11.]
522 cord_individual_obj[indivial_i,:] = [24. 4. 96. 100.]
523
524 min(cord_individual_obj[:,3]) = 11.0
525 histol_G_best_iter[iter,3] = 11.0
526 Begin iteration:
527
528 iter = 16
529 cord_individual_obj[indivial_i,:] = [ 0. 7. 89. 96.]
530 cord_individual_obj[indivial_i,:] = [ 1. 6. 72. 78.]
531 cord_individual_obj[indivial_i,:] = [ 2. 7. 13. 20.]
532 cord_individual_obj[indivial_i,:] = [ 3. 5. 26. 31.]
533 cord_individual_obj[indivial_i,:] = [ 4. 7. 30. 37.]
534 cord_individual_obj[indivial_i,:] = [ 5. 5. 84. 89.]
535 cord_individual_obj[indivial_i,:] = [ 6. 5. 9. 14.]
536 cord_individual_obj[indivial_i,:] = [ 7. 5. 51. 56.]
537 cord_individual_obj[indivial_i,:] = [ 8. 5. 46. 51.]
538 cord_individual_obj[indivial_i,:] = [ 9. 4. 17. 21.]
539 cord_individual_obj[indivial_i,:] = [10. 5. 50. 55.]
540 cord_individual_obj[indivial_i,:] = [11. 3. 8. 11.]
541 cord_individual_obj[indivial_i,:] = [12. 6. 49. 55.]
542 cord_individual_obj[indivial_i,:] = [13. 8. 21. 29.]
543 cord_individual_obj[indivial_i,:] = [14. 5. 42. 47.]
544 cord_individual_obj[indivial_i,:] = [15. 5. 72. 77.]
545 cord_individual_obj[indivial_i,:] = [16. 5. 73. 78.]
546 cord_individual_obj[indivial_i,:] = [17. 5. 19. 24.]
547 cord_individual_obj[indivial_i,:] = [18. 4. 17. 21.]
548 cord_individual_obj[indivial_i,:] = [19. 4. 38. 42.]
549 cord_individual_obj[indivial_i,:] = [20. 5. 54. 59.]
550 cord_individual_obj[indivial_i,:] = [21. 4. 61. 65.]
551 cord_individual_obj[indivial_i,:] = [22. 4. 38. 42.]
552 cord_individual_obj[indivial_i,:] = [23. 6. 34. 40.]
553 cord_individual_obj[indivial_i,:] = [24. 7. 14. 21.]
554
555 min(cord_individual_obj[:,3]) = 11.0
556 histol_G_best_iter[iter,3] = 11.0
557 Begin iteration:
558
559 iter = 17
560 cord_individual_obj[indivial_i,:] = [ 0. 3. 8. 11.]
561 cord_individual_obj[indivial_i,:] = [ 1. 5. 65. 70.]
562 cord_individual_obj[indivial_i,:] = [ 2. 5. 60. 65.]
563 cord_individual_obj[indivial_i,:] = [ 3. 5. 26. 31.]
564 cord_individual_obj[indivial_i,:] = [ 4. 5. 76. 81.]
565 cord_individual_obj[indivial_i,:] = [ 5. 5. 16. 21.]
566 cord_individual_obj[indivial_i,:] = [ 6. 4. 28. 32.]
567 cord_individual_obj[indivial_i,:] = [ 7. 4. 59. 63.]
568 cord_individual_obj[indivial_i,:] = [ 8. 3. 90. 93.]
569 cord_individual_obj[indivial_i,:] = [ 9. 7. 20. 27.]
570 cord_individual_obj[indivial_i,:] = [10. 3. 22. 25.]
571 cord_individual_obj[indivial_i,:] = [11. 5. 43. 48.]
572 cord_individual_obj[indivial_i,:] = [12. 7. 57. 64.]
573 cord_individual_obj[indivial_i,:] = [13. 6. 38. 44.]
574 cord_individual_obj[indivial_i,:] = [14. 6. 44. 50.]
575 cord_individual_obj[indivial_i,:] = [15. 3. 93. 96.]
576 cord_individual_obj[indivial_i,:] = [16. 5. 63. 68.]
577 cord_individual_obj[indivial_i,:] = [17. 4. 43. 47.]
578 cord_individual_obj[indivial_i,:] = [18. 5. 67. 72.]
579 cord_individual_obj[indivial_i,:] = [19. 5. 15. 20.]
580 cord_individual_obj[indivial_i,:] = [20. 4. 70. 74.]
581 cord_individual_obj[indivial_i,:] = [21. 4. 30. 34.]
582 cord_individual_obj[indivial_i,:] = [22. 3. 16. 19.]
583 cord_individual_obj[indivial_i,:] = [23. 4. 10. 14.]

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unknown

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584     cord_individual_obj[indivial_i, :] = [24. 3. 17. 20.]  
585  
586     min(cord_individual_obj[:, 3]) = 11.0  
587     historl_G_best_iter[iter, 3] = 11.0  
588 Begin iteration:  
589  
590 iter = 18  
591     cord_individual_obj[indivial_i, :] = [ 0. 5. 21. 26.]  
592     cord_individual_obj[indivial_i, :] = [ 1. 5. 18. 23.]  
593     cord_individual_obj[indivial_i, :] = [ 2. 4. 18. 22.]  
594     cord_individual_obj[indivial_i, :] = [ 3. 5. 40. 45.]  
595     cord_individual_obj[indivial_i, :] = [ 4. 4. 9. 13.]  
596     cord_individual_obj[indivial_i, :] = [ 5. 6. 48. 54.]  
597     cord_individual_obj[indivial_i, :] = [ 6. 4. 24. 28.]  
598     cord_individual_obj[indivial_i, :] = [ 7. 3. 86. 89.]  
599     cord_individual_obj[indivial_i, :] = [ 8. 4. 101. 105.]  
600     cord_individual_obj[indivial_i, :] = [ 9. 5. 51. 56.]  
601     cord_individual_obj[indivial_i, :] = [10. 7. 37. 44.]  
602     cord_individual_obj[indivial_i, :] = [11. 5. 88. 93.]  
603     cord_individual_obj[indivial_i, :] = [12. 4. 10. 14.]  
604     cord_individual_obj[indivial_i, :] = [13. 6. 64. 70.]  
605     cord_individual_obj[indivial_i, :] = [14. 3. 44. 47.]  
606     cord_individual_obj[indivial_i, :] = [15. 3. 8. 11.]  
607     cord_individual_obj[indivial_i, :] = [16. 5. 49. 54.]  
608     cord_individual_obj[indivial_i, :] = [17. 4. 39. 43.]  
609     cord_individual_obj[indivial_i, :] = [18. 7. 37. 44.]  
610     cord_individual_obj[indivial_i, :] = [19. 6. 31. 37.]  
611     cord_individual_obj[indivial_i, :] = [20. 5. 46. 51.]  
612     cord_individual_obj[indivial_i, :] = [21. 6. 40. 46.]  
613     cord_individual_obj[indivial_i, :] = [22. 4. 37. 41.]  
614     cord_individual_obj[indivial_i, :] = [23. 3. 80. 83.]  
615     cord_individual_obj[indivial_i, :] = [24. 4. 75. 79.]  
616  
617     min(cord_individual_obj[:, 3]) = 11.0  
618     historl_G_best_iter[iter, 3] = 11.0  
619 Begin iteration:  
620  
621 iter = 19  
622     cord_individual_obj[indivial_i, :] = [ 0. 6. 67. 73.]  
623     cord_individual_obj[indivial_i, :] = [ 1. 5. 55. 60.]  
624     cord_individual_obj[indivial_i, :] = [ 2. 5. 60. 65.]  
625     cord_individual_obj[indivial_i, :] = [ 3. 5. 43. 48.]  
626     cord_individual_obj[indivial_i, :] = [ 4. 4. 23. 27.]  
627     cord_individual_obj[indivial_i, :] = [ 5. 4. 75. 79.]  
628     cord_individual_obj[indivial_i, :] = [ 6. 7. 49. 56.]  
629     cord_individual_obj[indivial_i, :] = [ 7. 5. 11. 16.]  
630     cord_individual_obj[indivial_i, :] = [ 8. 3. 8. 11.]  
631     cord_individual_obj[indivial_i, :] = [ 9. 5. 54. 59.]  
632     cord_individual_obj[indivial_i, :] = [10. 4. 75. 79.]  
633     cord_individual_obj[indivial_i, :] = [11. 4. 74. 78.]  
634     cord_individual_obj[indivial_i, :] = [12. 5. 14. 19.]  
635     cord_individual_obj[indivial_i, :] = [13. 6. 20. 26.]  
636     cord_individual_obj[indivial_i, :] = [14. 4. 33. 37.]  
637     cord_individual_obj[indivial_i, :] = [15. 4. 23. 27.]  
638     cord_individual_obj[indivial_i, :] = [16. 5. 55. 60.]  
639     cord_individual_obj[indivial_i, :] = [17. 4. 38. 42.]  
640     cord_individual_obj[indivial_i, :] = [18. 3. 15. 18.]  
641     cord_individual_obj[indivial_i, :] = [19. 6. 18. 24.]  
642     cord_individual_obj[indivial_i, :] = [20. 5. 71. 76.]  
643     cord_individual_obj[indivial_i, :] = [21. 5. 9. 14.]  
644     cord_individual_obj[indivial_i, :] = [22. 5. 50. 55.]  
645     cord_individual_obj[indivial_i, :] = [23. 4. 53. 57.]  
646     cord_individual_obj[indivial_i, :] = [24. 4. 17. 21.]  
647  
648     min(cord_individual_obj[:, 3]) = 11.0  
649     historl_G_best_iter[iter, 3] = 11.0  
650 Begin iteration:  
651  
652 iter = 20  
653     cord_individual_obj[indivial_i, :] = [ 0. 5. 36. 41.]  
654     cord_individual_obj[indivial_i, :] = [ 1. 5. 63. 68.]  
655     cord_individual_obj[indivial_i, :] = [ 2. 4. 8. 12.]  
656     cord_individual_obj[indivial_i, :] = [ 3. 6. 39. 45.]  
657     cord_individual_obj[indivial_i, :] = [ 4. 5. 28. 33.]  
658     cord_individual_obj[indivial_i, :] = [ 5. 3. 8. 11.]  
659     cord_individual_obj[indivial_i, :] = [ 6. 5. 28. 33.]  
660     cord_individual_obj[indivial_i, :] = [ 7. 4. 44. 48.]  
661     cord_individual_obj[indivial_i, :] = [ 8. 5. 46. 51.]  
662     cord_individual_obj[indivial_i, :] = [ 9. 5. 23. 28.]  
663     cord_individual_obj[indivial_i, :] = [10. 3. 53. 56.]  
664     cord_individual_obj[indivial_i, :] = [11. 4. 50. 54.]  
665     cord_individual_obj[indivial_i, :] = [12. 4. 44. 48.]  
666     cord_individual_obj[indivial_i, :] = [13. 5. 44. 49.]  
667     cord_individual_obj[indivial_i, :] = [14. 4. 54. 58.]
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unknown

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668 cord_individual_obj[indivial_i, :] = [15. 4. 52. 56.]
669 cord_individual_obj[indivial_i, :] = [16. 4. 35. 39.]
670 cord_individual_obj[indivial_i, :] = [17. 3. 62. 65.]
671 cord_individual_obj[indivial_i, :] = [18. 3. 64. 67.]
672 cord_individual_obj[indivial_i, :] = [19. 4. 60. 64.]
673 cord_individual_obj[indivial_i, :] = [20. 3. 90. 93.]
674 cord_individual_obj[indivial_i, :] = [21. 5. 20. 25.]
675 cord_individual_obj[indivial_i, :] = [22. 4. 15. 19.]
676 cord_individual_obj[indivial_i, :] = [23. 3. 18. 21.]
677 cord_individual_obj[indivial_i, :] = [24. 4. 18. 22.]
678
679 min(cord_individual_obj[:, 3]) = 11.0
680 historl_G_best_iter[iter, 3] = 11.0
681 Iteration calculate over
682
683
684
685
686 All item are in Bin and:
687 Bin area = 1080
688 Real_area = 91.0
689 Proportion_of_area = 0.08425925925925926
690 BEST_CHROM =
691     berth: [ 5. 23. 18. 24. 11.5 17. 1.5 10.5 3.5]
692     time: [0. 2. 0. 0. 2. 0. 2. 2.]
693     num_QC: [2. 5. 2. 3. 4. 5. 3. 3. 5.]
694 Objective function values and some other indicators:
695 Obj0 = 3.00          Obj1 = 8.00          Obj0 + Obj1 = 11.00
696 Total movement of crane: 0.00
697 Total waiting time in berth position: 8.00
698 Total index of q during berthing: 419.00
699 Specific arrangement for each vessel:
700 V_id: 0           li: 4.0           xi: 5.0           bow of i: 3.0           tail of i: 7.0           gama_i0: 0.0           gama_i1: 1.0
    .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
701 V_id: 1           li: 6.0           xi: 23.0           bow of i: 20.0           tail of i: 26.0           gama_i0: 2.0           gama_i1: 2
    .0           gama_i1 + 1: 3.0           gama_i1 - gama_i0: 0.0           duration_time_i: 1.0           demand_i: 60.0           work
    .0           work load gap_i: 0
702 V_id: 2           li: 4.0           xi: 18.0           bow of i: 16.0           tail of i: 20.0           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
    .0           work load gap_i: 0
703 V_id: 3           li: 8.0           xi: 24.0           bow of i: 20.0           tail of i: 28.0           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: 100.0           work
    .0           work load gap_i: 0
704 V_id: 4           li: 9.0           xi: 11.5           bow of i: 7.0           tail of i: 16.0           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: 120.0           work
    .0           work load gap_i: 0
705 V_id: 5           li: 6.0           xi: 17.0           bow of i: 14.0           tail of i: 20.0           gama_i0: 2.0           gama_i1: 2
    .0           gama_i1 + 1: 3.0           gama_i1 - gama_i0: 0.0           duration_time_i: 1.0           demand_i: 80.0           work
    .0           work load gap_i: 0
706 V_id: 6           li: 3.0           xi: 1.5           bow of i: 0.0           tail of i: 3.0           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
707 V_id: 7           li: 7.0           xi: 10.5           bow of i: 7.0           tail of i: 14.0           gama_i0: 2.0           gama_i1: 3
    .0           gama_i1 + 1: 4.0           gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 120.0           work
    .0           work load gap_i: 0
708 V_id: 8           li: 7.0           xi: 3.5           bow of i: 0.0           tail of i: 7.0           gama_i0: 2.0           gama_i1: 3
    .0           gama_i1 + 1: 4.0           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
709
710 Algorithm finished and the total CPU time: 256 s
711 End
712

```