

unknown

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80 cord_individual_obj[indivial_i,:] = [16. 4. 28. 32.]
81 cord_individual_obj[indivial_i,:] = [17. 3. 4. 7.]
82 cord_individual_obj[indivial_i,:] = [18. 5. 29. 34.]
83 cord_individual_obj[indivial_i,:] = [19. 3. 15. 18.]
84 cord_individual_obj[indivial_i,:] = [20. 4. 5. 9.]
85 cord_individual_obj[indivial_i,:] = [21. 5. 45. 50.]
86 cord_individual_obj[indivial_i,:] = [22. 4. 4. 8.]
87 cord_individual_obj[indivial_i,:] = [23. 3. 14. 17.]
88 cord_individual_obj[indivial_i,:] = [24. 4. 5. 9.]
89
90 min(cord_individual_obj[:,3]) = 7.0
91 historl_G_best_iter[iter,3] = 7.0
92 Begin iteration:
93
94 iter = 2
95 cord_individual_obj[indivial_i,:] = [ 0. 4. 21. 25.]
96 cord_individual_obj[indivial_i,:] = [ 1. 5. 5. 10.]
97 cord_individual_obj[indivial_i,:] = [ 2. 4. 53. 57.]
98 cord_individual_obj[indivial_i,:] = [ 3. 4. 24. 28.]
99 cord_individual_obj[indivial_i,:] = [ 4. 4. 5. 9.]
100 cord_individual_obj[indivial_i,:] = [ 5. 5. 24. 29.]
101 cord_individual_obj[indivial_i,:] = [ 6. 2. 33. 35.]
102 cord_individual_obj[indivial_i,:] = [ 7. 3. 16. 19.]
103 cord_individual_obj[indivial_i,:] = [ 8. 5. 5. 10.]
104 cord_individual_obj[indivial_i,:] = [ 9. 3. 4. 7.]
105 cord_individual_obj[indivial_i,:] = [10. 4. 18. 22.]
106 cord_individual_obj[indivial_i,:] = [11. 4. 20. 24.]
107 cord_individual_obj[indivial_i,:] = [12. 5. 52. 57.]
108 cord_individual_obj[indivial_i,:] = [13. 4. 46. 50.]
109 cord_individual_obj[indivial_i,:] = [14. 3. 4. 7.]
110 cord_individual_obj[indivial_i,:] = [15. 3. 12. 15.]
111 cord_individual_obj[indivial_i,:] = [16. 4. 44. 48.]
112 cord_individual_obj[indivial_i,:] = [17. 5. 18. 23.]
113 cord_individual_obj[indivial_i,:] = [18. 4. 43. 47.]
114 cord_individual_obj[indivial_i,:] = [19. 3. 27. 30.]
115 cord_individual_obj[indivial_i,:] = [20. 3. 4. 7.]
116 cord_individual_obj[indivial_i,:] = [21. 3. 4. 7.]
117 cord_individual_obj[indivial_i,:] = [22. 5. 76. 81.]
118 cord_individual_obj[indivial_i,:] = [23. 3. 3. 6.]
119 cord_individual_obj[indivial_i,:] = [24. 4. 74. 78.]
120
121 min(cord_individual_obj[:,3]) = 6.0
122 historl_G_best_iter[iter,3] = 6.0
123 Begin iteration:
124
125 iter = 3
126 cord_individual_obj[indivial_i,:] = [ 0. 4. 27. 31.]
127 cord_individual_obj[indivial_i,:] = [ 1. 6. 6. 12.]
128 cord_individual_obj[indivial_i,:] = [ 2. 5. 5. 10.]
129 cord_individual_obj[indivial_i,:] = [ 3. 4. 4. 8.]
130 cord_individual_obj[indivial_i,:] = [ 4. 3. 20. 23.]
131 cord_individual_obj[indivial_i,:] = [ 5. 4. 3. 7.]
132 cord_individual_obj[indivial_i,:] = [ 6. 5. 4. 9.]
133 cord_individual_obj[indivial_i,:] = [ 7. 4. 3. 7.]
134 cord_individual_obj[indivial_i,:] = [ 8. 5. 5. 10.]
135 cord_individual_obj[indivial_i,:] = [ 9. 5. 5. 10.]
136 cord_individual_obj[indivial_i,:] = [10. 4. 4. 8.]
137 cord_individual_obj[indivial_i,:] = [11. 5. 5. 10.]
138 cord_individual_obj[indivial_i,:] = [12. 4. 5. 9.]
139 cord_individual_obj[indivial_i,:] = [13. 4. 34. 38.]
140 cord_individual_obj[indivial_i,:] = [14. 4. 13. 17.]
141 cord_individual_obj[indivial_i,:] = [15. 3. 4. 7.]
142 cord_individual_obj[indivial_i,:] = [16. 3. 4. 7.]
143 cord_individual_obj[indivial_i,:] = [17. 4. 5. 9.]
144 cord_individual_obj[indivial_i,:] = [18. 4. 34. 38.]
145 cord_individual_obj[indivial_i,:] = [19. 3. 26. 29.]
146 cord_individual_obj[indivial_i,:] = [20. 3. 22. 25.]
147 cord_individual_obj[indivial_i,:] = [21. 4. 28. 32.]
148 cord_individual_obj[indivial_i,:] = [22. 3. 3. 6.]
149 cord_individual_obj[indivial_i,:] = [23. 5. 6. 11.]
150 cord_individual_obj[indivial_i,:] = [24. 6. 10. 16.]
151
152 min(cord_individual_obj[:,3]) = 6.0
153 historl_G_best_iter[iter,3] = 6.0
154 Begin iteration:
155
156 iter = 4
157 cord_individual_obj[indivial_i,:] = [0. 3. 4. 7.]
158 cord_individual_obj[indivial_i,:] = [1. 6. 6. 12.]
159 cord_individual_obj[indivial_i,:] = [2. 3. 12. 15.]
160 cord_individual_obj[indivial_i,:] = [3. 4. 4. 8.]
161 cord_individual_obj[indivial_i,:] = [4. 3. 12. 15.]
162 cord_individual_obj[indivial_i,:] = [5. 5. 12. 17.]
163 cord_individual_obj[indivial_i,:] = [6. 5. 11. 16.]

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164 cord_individual_obj[indivial_i,:] = [7. 3. 4. 7.]
165 cord_individual_obj[indivial_i,:] = [8. 4. 27. 31.]
166 cord_individual_obj[indivial_i,:] = [9. 4. 4. 8.]
167 cord_individual_obj[indivial_i,:] = [10. 4. 4. 8.]
168 cord_individual_obj[indivial_i,:] = [11. 4. 4. 8.]
169 cord_individual_obj[indivial_i,:] = [12. 4. 10. 14.]
170 cord_individual_obj[indivial_i,:] = [13. 3. 3. 6.]
171 cord_individual_obj[indivial_i,:] = [14. 3. 4. 7.]
172 cord_individual_obj[indivial_i,:] = [15. 3. 4. 7.]
173 cord_individual_obj[indivial_i,:] = [16. 4. 4. 8.]
174 cord_individual_obj[indivial_i,:] = [17. 3. 4. 7.]
175 cord_individual_obj[indivial_i,:] = [18. 3. 4. 7.]
176 cord_individual_obj[indivial_i,:] = [19. 4. 35. 39.]
177 cord_individual_obj[indivial_i,:] = [20. 3. 3. 6.]
178 cord_individual_obj[indivial_i,:] = [21. 4. 14. 18.]
179 cord_individual_obj[indivial_i,:] = [22. 4. 14. 18.]
180 cord_individual_obj[indivial_i,:] = [23. 5. 12. 17.]
181 cord_individual_obj[indivial_i,:] = [24. 5. 18. 23.]
182
183 min(cord_individual_obj[:,3]) = 6.0
184 historl_G_best_iter[iter,3] = 6.0
185 Begin iteration:
186
187 iter = 5
188 cord_individual_obj[indivial_i,:] = [0. 3. 3. 6.]
189 cord_individual_obj[indivial_i,:] = [1. 6. 6. 12.]
190 cord_individual_obj[indivial_i,:] = [2. 4. 4. 8.]
191 cord_individual_obj[indivial_i,:] = [3. 4. 44. 48.]
192 cord_individual_obj[indivial_i,:] = [4. 3. 12. 15.]
193 cord_individual_obj[indivial_i,:] = [5. 4. 23. 27.]
194 cord_individual_obj[indivial_i,:] = [6. 4. 9. 13.]
195 cord_individual_obj[indivial_i,:] = [7. 3. 28. 31.]
196 cord_individual_obj[indivial_i,:] = [8. 4. 25. 29.]
197 cord_individual_obj[indivial_i,:] = [9. 4. 4. 8.]
198 cord_individual_obj[indivial_i,:] = [10. 4. 4. 8.]
199 cord_individual_obj[indivial_i,:] = [11. 4. 4. 8.]
200 cord_individual_obj[indivial_i,:] = [12. 4. 5. 9.]
201 cord_individual_obj[indivial_i,:] = [13. 4. 14. 18.]
202 cord_individual_obj[indivial_i,:] = [14. 4. 13. 17.]
203 cord_individual_obj[indivial_i,:] = [15. 3. 12. 15.]
204 cord_individual_obj[indivial_i,:] = [16. 4. 4. 8.]
205 cord_individual_obj[indivial_i,:] = [17. 3. 4. 7.]
206 cord_individual_obj[indivial_i,:] = [18. 4. 4. 8.]
207 cord_individual_obj[indivial_i,:] = [19. 3. 3. 6.]
208 cord_individual_obj[indivial_i,:] = [20. 4. 12. 16.]
209 cord_individual_obj[indivial_i,:] = [21. 4. 14. 18.]
210 cord_individual_obj[indivial_i,:] = [22. 5. 5. 10.]
211 cord_individual_obj[indivial_i,:] = [23. 5. 5. 10.]
212 cord_individual_obj[indivial_i,:] = [24. 5. 6. 11.]
213
214 min(cord_individual_obj[:,3]) = 6.0
215 historl_G_best_iter[iter,3] = 6.0
216 Begin iteration:
217
218 iter = 6
219 cord_individual_obj[indivial_i,:] = [0. 4. 83. 87.]
220 cord_individual_obj[indivial_i,:] = [1. 5. 37. 42.]
221 cord_individual_obj[indivial_i,:] = [2. 4. 67. 71.]
222 cord_individual_obj[indivial_i,:] = [3. 3. 3. 6.]
223 cord_individual_obj[indivial_i,:] = [4. 3. 52. 55.]
224 cord_individual_obj[indivial_i,:] = [5. 4. 92. 96.]
225 cord_individual_obj[indivial_i,:] = [6. 3. 38. 41.]
226 cord_individual_obj[indivial_i,:] = [7. 5. 86. 91.]
227 cord_individual_obj[indivial_i,:] = [8. 5. 79. 84.]
228 cord_individual_obj[indivial_i,:] = [9. 5. 36. 41.]
229 cord_individual_obj[indivial_i,:] = [10. 3. 46. 49.]
230 cord_individual_obj[indivial_i,:] = [11. 4. 45. 49.]
231 cord_individual_obj[indivial_i,:] = [12. 5. 42. 47.]
232 cord_individual_obj[indivial_i,:] = [13. 5. 83. 88.]
233 cord_individual_obj[indivial_i,:] = [14. 4. 81. 85.]
234 cord_individual_obj[indivial_i,:] = [15. 3. 55. 58.]
235 cord_individual_obj[indivial_i,:] = [16. 3. 113. 116.]
236 cord_individual_obj[indivial_i,:] = [17. 4. 37. 41.]
237 cord_individual_obj[indivial_i,:] = [18. 5. 38. 43.]
238 cord_individual_obj[indivial_i,:] = [19. 4. 96. 100.]
239 cord_individual_obj[indivial_i,:] = [20. 3. 45. 48.]
240 cord_individual_obj[indivial_i,:] = [21. 4. 70. 74.]
241 cord_individual_obj[indivial_i,:] = [22. 4. 57. 61.]
242 cord_individual_obj[indivial_i,:] = [23. 3. 11. 14.]
243 cord_individual_obj[indivial_i,:] = [24. 4. 97. 101.]
244
245 min(cord_individual_obj[:,3]) = 6.0
246 historl_G_best_iter[iter,3] = 6.0
247 Begin iteration:

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248
249 iter = 7
250 cord_individual_obj[indivial_i, :] = [ 0.  4. 83. 87.]
251 cord_individual_obj[indivial_i, :] = [ 1.  5. 28. 33.]
252 cord_individual_obj[indivial_i, :] = [ 2.  4. 67. 71.]
253 cord_individual_obj[indivial_i, :] = [ 3.  4. 59. 63.]
254 cord_individual_obj[indivial_i, :] = [ 4.  3. 52. 55.]
255 cord_individual_obj[indivial_i, :] = [ 5.  4. 15. 19.]
256 cord_individual_obj[indivial_i, :] = [ 6.  4. 22. 26.]
257 cord_individual_obj[indivial_i, :] = [ 7.  4. 65. 69.]
258 cord_individual_obj[indivial_i, :] = [ 8.  4. 58. 62.]
259 cord_individual_obj[indivial_i, :] = [ 9.  4. 37. 41.]
260 cord_individual_obj[indivial_i, :] = [10.  4. 78. 82.]
261 cord_individual_obj[indivial_i, :] = [11.  4. 34. 38.]
262 cord_individual_obj[indivial_i, :] = [12.  4. 29. 33.]
263 cord_individual_obj[indivial_i, :] = [13.  4. 58. 62.]
264 cord_individual_obj[indivial_i, :] = [14.  3. 67. 70.]
265 cord_individual_obj[indivial_i, :] = [15.  4. 55. 59.]
266 cord_individual_obj[indivial_i, :] = [16.  3.  3. 6.]
267 cord_individual_obj[indivial_i, :] = [17.  4. 37. 41.]
268 cord_individual_obj[indivial_i, :] = [18.  4. 84. 88.]
269 cord_individual_obj[indivial_i, :] = [19.  4. 29. 33.]
270 cord_individual_obj[indivial_i, :] = [20.  4. 62. 66.]
271 cord_individual_obj[indivial_i, :] = [21.  4. 60. 64.]
272 cord_individual_obj[indivial_i, :] = [22.  4. 120. 124.]
273 cord_individual_obj[indivial_i, :] = [23.  5. 22. 27.]
274 cord_individual_obj[indivial_i, :] = [24.  4. 22. 26.]
275

276 min(cord_individual_obj[:, 3]) = 6.0
277 historl_G_best_iter[iter, 3] = 6.0
278 Begin iteration:
279
280 iter = 8
281 cord_individual_obj[indivial_i, :] = [ 0.  4. 36. 40.]
282 cord_individual_obj[indivial_i, :] = [ 1.  5. 28. 33.]
283 cord_individual_obj[indivial_i, :] = [ 2.  3. 42. 45.]
284 cord_individual_obj[indivial_i, :] = [ 3.  5. 60. 65.]
285 cord_individual_obj[indivial_i, :] = [ 4.  4. 72. 76.]
286 cord_individual_obj[indivial_i, :] = [ 5.  3. 54. 57.]
287 cord_individual_obj[indivial_i, :] = [ 6.  3. 22. 25.]
288 cord_individual_obj[indivial_i, :] = [ 7.  5. 65. 70.]
289 cord_individual_obj[indivial_i, :] = [ 8.  5. 10. 15.]
290 cord_individual_obj[indivial_i, :] = [ 9.  6. 38. 44.]
291 cord_individual_obj[indivial_i, :] = [10.  4. 72. 76.]
292 cord_individual_obj[indivial_i, :] = [11.  3. 41. 44.]
293 cord_individual_obj[indivial_i, :] = [12.  3. 41. 44.]
294 cord_individual_obj[indivial_i, :] = [13.  5. 67. 72.]
295 cord_individual_obj[indivial_i, :] = [14.  3. 67. 70.]
296 cord_individual_obj[indivial_i, :] = [15.  4. 51. 55.]
297 cord_individual_obj[indivial_i, :] = [16.  4. 55. 59.]
298 cord_individual_obj[indivial_i, :] = [17.  4. 36. 40.]
299 cord_individual_obj[indivial_i, :] = [18.  4. 58. 62.]
300 cord_individual_obj[indivial_i, :] = [19.  4. 19. 23.]
301 cord_individual_obj[indivial_i, :] = [20.  3. 65. 68.]
302 cord_individual_obj[indivial_i, :] = [21.  4. 78. 82.]
303 cord_individual_obj[indivial_i, :] = [22.  3.  3. 6.]
304 cord_individual_obj[indivial_i, :] = [23.  4. 30. 34.]
305 cord_individual_obj[indivial_i, :] = [24.  4. 66. 70.]
306

307 min(cord_individual_obj[:, 3]) = 6.0
308 historl_G_best_iter[iter, 3] = 6.0
309 Begin iteration:
310
311 iter = 9
312 cord_individual_obj[indivial_i, :] = [ 0.  3. 45. 48.]
313 cord_individual_obj[indivial_i, :] = [ 1.  5. 28. 33.]
314 cord_individual_obj[indivial_i, :] = [ 2.  4. 67. 71.]
315 cord_individual_obj[indivial_i, :] = [ 3.  4. 68. 72.]
316 cord_individual_obj[indivial_i, :] = [ 4.  3. 56. 59.]
317 cord_individual_obj[indivial_i, :] = [ 5.  5. 13. 18.]
318 cord_individual_obj[indivial_i, :] = [ 6.  4. 22. 26.]
319 cord_individual_obj[indivial_i, :] = [ 7.  4. 65. 69.]
320 cord_individual_obj[indivial_i, :] = [ 8.  5. 10. 15.]
321 cord_individual_obj[indivial_i, :] = [ 9.  6. 44. 50.]
322 cord_individual_obj[indivial_i, :] = [10.  4. 74. 78.]
323 cord_individual_obj[indivial_i, :] = [11.  4. 34. 38.]
324 cord_individual_obj[indivial_i, :] = [12.  3. 30. 33.]
325 cord_individual_obj[indivial_i, :] = [13.  5. 59. 64.]
326 cord_individual_obj[indivial_i, :] = [14.  3. 67. 70.]
327 cord_individual_obj[indivial_i, :] = [15.  5. 61. 66.]
328 cord_individual_obj[indivial_i, :] = [16.  4. 55. 59.]
329 cord_individual_obj[indivial_i, :] = [17.  4. 37. 41.]
330 cord_individual_obj[indivial_i, :] = [18.  4. 36. 40.]
331 cord_individual_obj[indivial_i, :] = [19.  4. 29. 33.]

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unknown

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332 cord_individual_obj[indivial_i,:] = [20. 4. 63. 67.]  
333 cord_individual_obj[indivial_i,:] = [21. 3. 3. 6.]  
334 cord_individual_obj[indivial_i,:] = [22. 4. 108. 112.]  
335 cord_individual_obj[indivial_i,:] = [23. 5. 22. 27.]  
336 cord_individual_obj[indivial_i,:] = [24. 4. 22. 26.]  
337  
338 min(cord_individual_obj[:,3]) = 6.0  
339 histol_G_best_iter[iter,3] = 6.0  
340 Begin iteration:  
341  
342 iter = 10  
343 cord_individual_obj[indivial_i,:] = [0. 4. 5. 9.]  
344 cord_individual_obj[indivial_i,:] = [1. 5. 13. 18.]  
345 cord_individual_obj[indivial_i,:] = [2. 5. 12. 17.]  
346 cord_individual_obj[indivial_i,:] = [3. 4. 39. 43.]  
347 cord_individual_obj[indivial_i,:] = [4. 4. 26. 30.]  
348 cord_individual_obj[indivial_i,:] = [5. 4. 4. 8.]  
349 cord_individual_obj[indivial_i,:] = [6. 4. 47. 51.]  
350 cord_individual_obj[indivial_i,:] = [7. 3. 76. 79.]  
351 cord_individual_obj[indivial_i,:] = [8. 4. 64. 68.]  
352 cord_individual_obj[indivial_i,:] = [9. 5. 5. 10.]  
353 cord_individual_obj[indivial_i,:] = [10. 4. 48. 52.]  
354 cord_individual_obj[indivial_i,:] = [11. 5. 4. 9.]  
355 cord_individual_obj[indivial_i,:] = [12. 5. 5. 10.]  
356 cord_individual_obj[indivial_i,:] = [13. 3. 45. 48.]  
357 cord_individual_obj[indivial_i,:] = [14. 3. 28. 31.]  
358 cord_individual_obj[indivial_i,:] = [15. 3. 36. 39.]  
359 cord_individual_obj[indivial_i,:] = [16. 3. 43. 46.]  
360 cord_individual_obj[indivial_i,:] = [17. 4. 22. 26.]  
361 cord_individual_obj[indivial_i,:] = [18. 3. 48. 51.]  
362 cord_individual_obj[indivial_i,:] = [19. 3. 42. 45.]  
363 cord_individual_obj[indivial_i,:] = [20. 3. 20. 23.]  
364 cord_individual_obj[indivial_i,:] = [21. 4. 60. 64.]  
365 cord_individual_obj[indivial_i,:] = [22. 3. 3. 6.]  
366 cord_individual_obj[indivial_i,:] = [23. 5. 17. 22.]  
367 cord_individual_obj[indivial_i,:] = [24. 6. 95. 101.]  
368  
369 min(cord_individual_obj[:,3]) = 6.0  
370 histol_G_best_iter[iter,3] = 6.0  
371 Begin iteration:  
372  
373 iter = 11  
374 cord_individual_obj[indivial_i,:] = [0. 3. 15. 18.]  
375 cord_individual_obj[indivial_i,:] = [1. 4. 16. 20.]  
376 cord_individual_obj[indivial_i,:] = [2. 4. 5. 9.]  
377 cord_individual_obj[indivial_i,:] = [3. 5. 16. 21.]  
378 cord_individual_obj[indivial_i,:] = [4. 3. 19. 22.]  
379 cord_individual_obj[indivial_i,:] = [5. 4. 21. 25.]  
380 cord_individual_obj[indivial_i,:] = [6. 6. 29. 35.]  
381 cord_individual_obj[indivial_i,:] = [7. 4. 29. 33.]  
382 cord_individual_obj[indivial_i,:] = [8. 5. 56. 61.]  
383 cord_individual_obj[indivial_i,:] = [9. 3. 3. 6.]  
384 cord_individual_obj[indivial_i,:] = [10. 4. 20. 24.]  
385 cord_individual_obj[indivial_i,:] = [11. 3. 41. 44.]  
386 cord_individual_obj[indivial_i,:] = [12. 4. 4. 8.]  
387 cord_individual_obj[indivial_i,:] = [13. 4. 45. 49.]  
388 cord_individual_obj[indivial_i,:] = [14. 4. 45. 49.]  
389 cord_individual_obj[indivial_i,:] = [15. 5. 53. 58.]  
390 cord_individual_obj[indivial_i,:] = [16. 3. 70. 73.]  
391 cord_individual_obj[indivial_i,:] = [17. 3. 86. 89.]  
392 cord_individual_obj[indivial_i,:] = [18. 4. 84. 88.]  
393 cord_individual_obj[indivial_i,:] = [19. 3. 68. 71.]  
394 cord_individual_obj[indivial_i,:] = [20. 4. 15. 19.]  
395 cord_individual_obj[indivial_i,:] = [21. 4. 24. 28.]  
396 cord_individual_obj[indivial_i,:] = [22. 4. 108. 112.]  
397 cord_individual_obj[indivial_i,:] = [23. 5. 5. 10.]  
398 cord_individual_obj[indivial_i,:] = [24. 3. 3. 6.]  
399  
400 min(cord_individual_obj[:,3]) = 6.0  
401 histol_G_best_iter[iter,3] = 6.0  
402 Begin iteration:  
403  
404 iter = 12  
405 cord_individual_obj[indivial_i,:] = [0. 3. 35. 38.]  
406 cord_individual_obj[indivial_i,:] = [1. 4. 23. 27.]  
407 cord_individual_obj[indivial_i,:] = [2. 4. 17. 21.]  
408 cord_individual_obj[indivial_i,:] = [3. 3. 90. 93.]  
409 cord_individual_obj[indivial_i,:] = [4. 2. 4. 6.]  
410 cord_individual_obj[indivial_i,:] = [5. 6. 6. 12.]  
411 cord_individual_obj[indivial_i,:] = [6. 5. 55. 60.]  
412 cord_individual_obj[indivial_i,:] = [7. 4. 46. 50.]  
413 cord_individual_obj[indivial_i,:] = [8. 4. 5. 9.]  
414 cord_individual_obj[indivial_i,:] = [9. 4. 13. 17.]  
415 cord_individual_obj[indivial_i,:] = [10. 4. 46. 50.]
```

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416 cord_individual_obj[indivial_i,:] = [11. 3. 6. 9.]
417 cord_individual_obj[indivial_i,:] = [12. 4. 6. 10.]
418 cord_individual_obj[indivial_i,:] = [13. 4. 55. 59.]
419 cord_individual_obj[indivial_i,:] = [14. 3. 28. 31.]
420 cord_individual_obj[indivial_i,:] = [15. 3. 21. 24.]
421 cord_individual_obj[indivial_i,:] = [16. 4. 21. 25.]
422 cord_individual_obj[indivial_i,:] = [17. 4. 15. 19.]
423 cord_individual_obj[indivial_i,:] = [18. 4. 10. 14.]
424 cord_individual_obj[indivial_i,:] = [19. 3. 20. 23.]
425 cord_individual_obj[indivial_i,:] = [20. 3. 13. 16.]
426 cord_individual_obj[indivial_i,:] = [21. 3. 4. 7.]
427 cord_individual_obj[indivial_i,:] = [22. 3. 3. 6.]
428 cord_individual_obj[indivial_i,:] = [23. 4. 5. 9.]
429 cord_individual_obj[indivial_i,:] = [24. 4. 12. 16.]
430
431 min(cord_individual_obj[:,3]) = 6.0
432 histol_G_best_iter[iter,3] = 6.0
433 Begin iteration:
434
435 iter = 13
436 cord_individual_obj[indivial_i,:] = [ 0. 3. 38. 41.]
437 cord_individual_obj[indivial_i,:] = [ 1. 7. 17. 24.]
438 cord_individual_obj[indivial_i,:] = [ 2. 4. 64. 68.]
439 cord_individual_obj[indivial_i,:] = [ 3. 2. 4. 6.]
440 cord_individual_obj[indivial_i,:] = [ 4. 3. 35. 38.]
441 cord_individual_obj[indivial_i,:] = [ 5. 4. 15. 19.]
442 cord_individual_obj[indivial_i,:] = [ 6. 4. 54. 58.]
443 cord_individual_obj[indivial_i,:] = [ 7. 4. 18. 22.]
444 cord_individual_obj[indivial_i,:] = [ 8. 6. 36. 42.]
445 cord_individual_obj[indivial_i,:] = [ 9. 5. 5. 10.]
446 cord_individual_obj[indivial_i,:] = [10. 3. 7. 10.]
447 cord_individual_obj[indivial_i,:] = [11. 5. 12. 17.]
448 cord_individual_obj[indivial_i,:] = [12. 5. 21. 26.]
449 cord_individual_obj[indivial_i,:] = [13. 4. 76. 80.]
450 cord_individual_obj[indivial_i,:] = [14. 3. 43. 46.]
451 cord_individual_obj[indivial_i,:] = [15. 4. 83. 87.]
452 cord_individual_obj[indivial_i,:] = [16. 4. 75. 79.]
453 cord_individual_obj[indivial_i,:] = [17. 5. 10. 15.]
454 cord_individual_obj[indivial_i,:] = [18. 5. 4. 9.]
455 cord_individual_obj[indivial_i,:] = [19. 3. 8. 11.]
456 cord_individual_obj[indivial_i,:] = [20. 3. 13. 16.]
457 cord_individual_obj[indivial_i,:] = [21. 3. 44. 47.]
458 cord_individual_obj[indivial_i,:] = [22. 4. 56. 60.]
459 cord_individual_obj[indivial_i,:] = [23. 5. 37. 42.]
460 cord_individual_obj[indivial_i,:] = [24. 5. 92. 97.]
461
462 min(cord_individual_obj[:,3]) = 6.0
463 histol_G_best_iter[iter,3] = 6.0
464 Begin iteration:
465
466 iter = 14
467 cord_individual_obj[indivial_i,:] = [ 0. 4. 45. 49.]
468 cord_individual_obj[indivial_i,:] = [ 1. 5. 17. 22.]
469 cord_individual_obj[indivial_i,:] = [ 2. 4. 26. 30.]
470 cord_individual_obj[indivial_i,:] = [ 3. 5. 44. 49.]
471 cord_individual_obj[indivial_i,:] = [ 4. 3. 48. 51.]
472 cord_individual_obj[indivial_i,:] = [ 5. 4. 34. 38.]
473 cord_individual_obj[indivial_i,:] = [ 6. 5. 94. 99.]
474 cord_individual_obj[indivial_i,:] = [ 7. 4. 35. 39.]
475 cord_individual_obj[indivial_i,:] = [ 8. 5. 85. 90.]
476 cord_individual_obj[indivial_i,:] = [ 9. 4. 35. 39.]
477 cord_individual_obj[indivial_i,:] = [10. 4. 9. 13.]
478 cord_individual_obj[indivial_i,:] = [11. 3. 73. 76.]
479 cord_individual_obj[indivial_i,:] = [12. 5. 24. 29.]
480 cord_individual_obj[indivial_i,:] = [13. 3. 64. 67.]
481 cord_individual_obj[indivial_i,:] = [14. 4. 40. 44.]
482 cord_individual_obj[indivial_i,:] = [15. 3. 63. 66.]
483 cord_individual_obj[indivial_i,:] = [16. 3. 20. 23.]
484 cord_individual_obj[indivial_i,:] = [17. 3. 12. 15.]
485 cord_individual_obj[indivial_i,:] = [18. 5. 5. 10.]
486 cord_individual_obj[indivial_i,:] = [19. 3. 58. 61.]
487 cord_individual_obj[indivial_i,:] = [20. 3. 14. 17.]
488 cord_individual_obj[indivial_i,:] = [21. 3. 55. 58.]
489 cord_individual_obj[indivial_i,:] = [22. 4. 38. 42.]
490 cord_individual_obj[indivial_i,:] = [23. 5. 29. 34.]
491 cord_individual_obj[indivial_i,:] = [24. 2. 4. 6.]
492
493 min(cord_individual_obj[:,3]) = 6.0
494 histol_G_best_iter[iter,3] = 6.0
495 Begin iteration:
496
497 iter = 15
498 cord_individual_obj[indivial_i,:] = [ 0. 3. 38. 41.]
499 cord_individual_obj[indivial_i,:] = [ 1. 6. 16. 22.]

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500 cord_individual_obj[indivial_i, :] = [ 2. 5. 15. 20.]
501 cord_individual_obj[indivial_i, :] = [ 3. 6. 6. 12.]
502 cord_individual_obj[indivial_i, :] = [ 4. 4. 24. 28.]
503 cord_individual_obj[indivial_i, :] = [ 5. 5. 5. 10.]
504 cord_individual_obj[indivial_i, :] = [ 6. 2. 4. 6.]
505 cord_individual_obj[indivial_i, :] = [ 7. 4. 14. 18.]
506 cord_individual_obj[indivial_i, :] = [ 8. 4. 52. 56.]
507 cord_individual_obj[indivial_i, :] = [ 9. 6. 5. 11.]
508 cord_individual_obj[indivial_i, :] = [10. 3. 7. 10.]
509 cord_individual_obj[indivial_i, :] = [11. 5. 45. 50.]
510 cord_individual_obj[indivial_i, :] = [12. 5. 16. 21.]
511 cord_individual_obj[indivial_i, :] = [13. 4. 76. 80.]
512 cord_individual_obj[indivial_i, :] = [14. 3. 43. 46.]
513 cord_individual_obj[indivial_i, :] = [15. 4. 53. 57.]
514 cord_individual_obj[indivial_i, :] = [16. 4. 55. 59.]
515 cord_individual_obj[indivial_i, :] = [17. 5. 20. 25.]
516 cord_individual_obj[indivial_i, :] = [18. 6. 70. 76.]
517 cord_individual_obj[indivial_i, :] = [19. 4. 61. 65.]
518 cord_individual_obj[indivial_i, :] = [20. 4. 5. 9.]
519 cord_individual_obj[indivial_i, :] = [21. 4. 31. 35.]
520 cord_individual_obj[indivial_i, :] = [22. 4. 57. 61.]
521 cord_individual_obj[indivial_i, :] = [23. 6. 6. 12.]
522 cord_individual_obj[indivial_i, :] = [24. 5. 65. 70.]
523
524 min(cord_individual_obj[:, 3]) = 6.0
525 histol_G_best_iter[iter, 3] = 6.0
526 Begin iteration:
527
528 iter = 16
529 cord_individual_obj[indivial_i, :] = [ 0. 3. 4. 7.]
530 cord_individual_obj[indivial_i, :] = [ 1. 4. 3. 7.]
531 cord_individual_obj[indivial_i, :] = [ 2. 2. 78. 80.]
532 cord_individual_obj[indivial_i, :] = [ 3. 5. 44. 49.]
533 cord_individual_obj[indivial_i, :] = [ 4. 3. 35. 38.]
534 cord_individual_obj[indivial_i, :] = [ 5. 4. 8. 12.]
535 cord_individual_obj[indivial_i, :] = [ 6. 5. 54. 59.]
536 cord_individual_obj[indivial_i, :] = [ 7. 4. 50. 54.]
537 cord_individual_obj[indivial_i, :] = [ 8. 4. 13. 17.]
538 cord_individual_obj[indivial_i, :] = [ 9. 5. 12. 17.]
539 cord_individual_obj[indivial_i, :] = [10. 3. 3. 6.]
540 cord_individual_obj[indivial_i, :] = [11. 4. 24. 28.]
541 cord_individual_obj[indivial_i, :] = [12. 4. 40. 44.]
542 cord_individual_obj[indivial_i, :] = [13. 2. 4. 6.]
543 cord_individual_obj[indivial_i, :] = [14. 3. 15. 18.]
544 cord_individual_obj[indivial_i, :] = [15. 4. 56. 60.]
545 cord_individual_obj[indivial_i, :] = [16. 4. 35. 39.]
546 cord_individual_obj[indivial_i, :] = [17. 3. 4. 7.]
547 cord_individual_obj[indivial_i, :] = [18. 5. 42. 47.]
548 cord_individual_obj[indivial_i, :] = [19. 3. 4. 7.]
549 cord_individual_obj[indivial_i, :] = [20. 2. 38. 40.]
550 cord_individual_obj[indivial_i, :] = [21. 4. 48. 52.]
551 cord_individual_obj[indivial_i, :] = [22. 3. 4. 7.]
552 cord_individual_obj[indivial_i, :] = [23. 4. 4. 8.]
553 cord_individual_obj[indivial_i, :] = [24. 4. 57. 61.]
554
555 min(cord_individual_obj[:, 3]) = 6.0
556 histol_G_best_iter[iter, 3] = 6.0
557 Begin iteration:
558
559 iter = 17
560 cord_individual_obj[indivial_i, :] = [ 0. 3. 47. 50.]
561 cord_individual_obj[indivial_i, :] = [ 1. 4. 24. 28.]
562 cord_individual_obj[indivial_i, :] = [ 2. 3. 3. 6.]
563 cord_individual_obj[indivial_i, :] = [ 3. 4. 22. 26.]
564 cord_individual_obj[indivial_i, :] = [ 4. 2. 34. 36.]
565 cord_individual_obj[indivial_i, :] = [ 5. 3. 10. 13.]
566 cord_individual_obj[indivial_i, :] = [ 6. 3. 42. 45.]
567 cord_individual_obj[indivial_i, :] = [ 7. 3. 9. 12.]
568 cord_individual_obj[indivial_i, :] = [ 8. 4. 43. 47.]
569 cord_individual_obj[indivial_i, :] = [ 9. 4. 11. 15.]
570 cord_individual_obj[indivial_i, :] = [10. 4. 35. 39.]
571 cord_individual_obj[indivial_i, :] = [11. 3. 25. 28.]
572 cord_individual_obj[indivial_i, :] = [12. 4. 33. 37.]
573 cord_individual_obj[indivial_i, :] = [13. 2. 60. 62.]
574 cord_individual_obj[indivial_i, :] = [14. 3. 32. 35.]
575 cord_individual_obj[indivial_i, :] = [15. 3. 25. 28.]
576 cord_individual_obj[indivial_i, :] = [16. 4. 55. 59.]
577 cord_individual_obj[indivial_i, :] = [17. 3. 34. 37.]
578 cord_individual_obj[indivial_i, :] = [18. 4. 21. 25.]
579 cord_individual_obj[indivial_i, :] = [19. 3. 21. 24.]
580 cord_individual_obj[indivial_i, :] = [20. 3. 34. 37.]
581 cord_individual_obj[indivial_i, :] = [21. 4. 45. 49.]
582 cord_individual_obj[indivial_i, :] = [22. 3. 20. 23.]
583 cord_individual_obj[indivial_i, :] = [23. 3. 25. 28.]

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584     cord_individual_obj[indivial_i, :] = [24. 4. 43. 47.]
585
586     min(cord_individual_obj[:, 3]) = 6.0
587     historl_G_best_iter[iter, 3] = 6.0
588 Begin iteration:
589
590 iter = 18
591     cord_individual_obj[indivial_i, :] = [ 0. 3. 60. 63.]
592     cord_individual_obj[indivial_i, :] = [ 1. 3. 26. 29.]
593     cord_individual_obj[indivial_i, :] = [ 2. 4. 12. 16.]
594     cord_individual_obj[indivial_i, :] = [ 3. 4. 14. 18.]
595     cord_individual_obj[indivial_i, :] = [ 4. 2. 34. 36.]
596     cord_individual_obj[indivial_i, :] = [ 5. 4. 13. 17.]
597     cord_individual_obj[indivial_i, :] = [ 6. 3. 34. 37.]
598     cord_individual_obj[indivial_i, :] = [ 7. 4. 18. 22.]
599     cord_individual_obj[indivial_i, :] = [ 8. 4. 35. 39.]
600     cord_individual_obj[indivial_i, :] = [ 9. 5. 28. 33.]
601     cord_individual_obj[indivial_i, :] = [10. 3. 35. 38.]
602     cord_individual_obj[indivial_i, :] = [11. 3. 20. 23.]
603     cord_individual_obj[indivial_i, :] = [12. 3. 36. 39.]
604     cord_individual_obj[indivial_i, :] = [13. 3. 3. 6.]
605     cord_individual_obj[indivial_i, :] = [14. 3. 28. 31.]
606     cord_individual_obj[indivial_i, :] = [15. 4. 25. 29.]
607     cord_individual_obj[indivial_i, :] = [16. 4. 35. 39.]
608     cord_individual_obj[indivial_i, :] = [17. 2. 15. 17.]
609     cord_individual_obj[indivial_i, :] = [18. 4. 24. 28.]
610     cord_individual_obj[indivial_i, :] = [19. 3. 21. 24.]
611     cord_individual_obj[indivial_i, :] = [20. 3. 20. 23.]
612     cord_individual_obj[indivial_i, :] = [21. 3. 34. 37.]
613     cord_individual_obj[indivial_i, :] = [22. 3. 20. 23.]
614     cord_individual_obj[indivial_i, :] = [23. 3. 35. 38.]
615     cord_individual_obj[indivial_i, :] = [24. 4. 81. 85.]
616
617     min(cord_individual_obj[:, 3]) = 6.0
618     historl_G_best_iter[iter, 3] = 6.0
619 Begin iteration:
620
621 iter = 19
622     cord_individual_obj[indivial_i, :] = [ 0. 4. 11. 15.]
623     cord_individual_obj[indivial_i, :] = [ 1. 3. 38. 41.]
624     cord_individual_obj[indivial_i, :] = [ 2. 3. 27. 30.]
625     cord_individual_obj[indivial_i, :] = [ 3. 3. 60. 63.]
626     cord_individual_obj[indivial_i, :] = [ 4. 3. 105. 108.]
627     cord_individual_obj[indivial_i, :] = [ 5. 4. 44. 48.]
628     cord_individual_obj[indivial_i, :] = [ 6. 6. 22. 28.]
629     cord_individual_obj[indivial_i, :] = [ 7. 5. 46. 51.]
630     cord_individual_obj[indivial_i, :] = [ 8. 5. 11. 16.]
631     cord_individual_obj[indivial_i, :] = [ 9. 5. 36. 41.]
632     cord_individual_obj[indivial_i, :] = [10. 3. 3. 6.]
633     cord_individual_obj[indivial_i, :] = [11. 4. 14. 18.]
634     cord_individual_obj[indivial_i, :] = [12. 4. 27. 31.]
635     cord_individual_obj[indivial_i, :] = [13. 2. 82. 84.]
636     cord_individual_obj[indivial_i, :] = [14. 3. 48. 51.]
637     cord_individual_obj[indivial_i, :] = [15. 3. 37. 40.]
638     cord_individual_obj[indivial_i, :] = [16. 4. 79. 83.]
639     cord_individual_obj[indivial_i, :] = [17. 5. 16. 21.]
640     cord_individual_obj[indivial_i, :] = [18. 5. 5. 10.]
641     cord_individual_obj[indivial_i, :] = [19. 4. 61. 65.]
642     cord_individual_obj[indivial_i, :] = [20. 3. 52. 55.]
643     cord_individual_obj[indivial_i, :] = [21. 3. 52. 55.]
644     cord_individual_obj[indivial_i, :] = [22. 3. 4. 7.]
645     cord_individual_obj[indivial_i, :] = [23. 6. 5. 11.]
646     cord_individual_obj[indivial_i, :] = [24. 3. 3. 6.]
647
648     min(cord_individual_obj[:, 3]) = 6.0
649     historl_G_best_iter[iter, 3] = 6.0
650 Begin iteration:
651
652 iter = 20
653     cord_individual_obj[indivial_i, :] = [ 0. 3. 44. 47.]
654     cord_individual_obj[indivial_i, :] = [ 1. 4. 5. 9.]
655     cord_individual_obj[indivial_i, :] = [ 2. 3. 8. 11.]
656     cord_individual_obj[indivial_i, :] = [ 3. 4. 38. 42.]
657     cord_individual_obj[indivial_i, :] = [ 4. 3. 3. 6.]
658     cord_individual_obj[indivial_i, :] = [ 5. 4. 10. 14.]
659     cord_individual_obj[indivial_i, :] = [ 6. 4. 10. 14.]
660     cord_individual_obj[indivial_i, :] = [ 7. 3. 36. 39.]
661     cord_individual_obj[indivial_i, :] = [ 8. 4. 17. 21.]
662     cord_individual_obj[indivial_i, :] = [ 9. 4. 71. 75.]
663     cord_individual_obj[indivial_i, :] = [10. 2. 54. 56.]
664     cord_individual_obj[indivial_i, :] = [11. 3. 22. 25.]
665     cord_individual_obj[indivial_i, :] = [12. 3. 61. 64.]
666     cord_individual_obj[indivial_i, :] = [13. 3. 55. 58.]
667     cord_individual_obj[indivial_i, :] = [14. 3. 68. 71.]

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668 cord_individual_obj[indivial_i,:] = [15. 3. 63. 66.]
669 cord_individual_obj[indivial_i,:] = [16. 3. 19. 22.]
670 cord_individual_obj[indivial_i,:] = [17. 3. 50. 53.]
671 cord_individual_obj[indivial_i,:] = [18. 4. 43. 47.]
672 cord_individual_obj[indivial_i,:] = [19. 3. 20. 23.]
673 cord_individual_obj[indivial_i,:] = [20. 3. 51. 54.]
674 cord_individual_obj[indivial_i,:] = [21. 3. 85. 88.]
675 cord_individual_obj[indivial_i,:] = [22. 3. 34. 37.]
676 cord_individual_obj[indivial_i,:] = [23. 4. 6. 10.]
677 cord_individual_obj[indivial_i,:] = [24. 4. 31. 35.]
678
679 min(cord_individual_obj[:, 3]) = 6.0
680 historl_G_best_iter[iter, 3] = 6.0
681 Iteration calculate over
682
683
684
685
686 All item are in Bin and:
687 Bin area = 1080
688 Real_area = 97.0
689 Proportion_of_area = 0.08981481481481482
690 BEST_CHROM =
691     berth: [10. 24.5 9. 4. 14. 18.5 3. ]
692     time: [0. 0. 2. 0. 0. 1.]
693     num_QC: [3. 2. 4. 5. 4. 2. 5.]
694 Objective function values and some other indicators:
695 Obj0 = 3.00          Obj1 = 3.00          Obj0 + Obj1 = 6.00
696 Total movement of crane: 0.00
697 Total waiting time in berth position: 3.00
698 Total index of q during berthing: 370.00
699 Specific arrangement for each vessel:
700
    V_id: 0           li: 4.0           xi: 10.0           bow of i: 8.0           tail of i: 12.0           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
    load_i: 120.0           work load gap_i: 0
701
    V_id: 1           li: 7.0           xi: 24.5           bow of i: 21.0           tail of i: 28.0           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: 100.0           work
    load_i: 100.0           work load gap_i: 0
702
    V_id: 2           li: 6.0           xi: 9.0           bow of i: 6.0           tail of i: 12.0           gama_i0: 2.0           gama_i1: 3.0
    .0             gama_i1 + 1: 4.0           gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 160.0           work load_i:
    160.0           work load gap_i: 0
703
    V_id: 3           li: 8.0           xi: 4.0           bow of i: 0.0           tail of i: 8.0           gama_i0: 0.0           gama_i1: 0.0
    .0             gama_i1 + 1: 1.0           gama_i1 - gama_i0: 0.0           duration_time_i: 1.0           demand_i: 100.0           work load_i:
    100.0           work load gap_i: 0
704
    V_id: 4           li: 4.0           xi: 14.0           bow of i: 12.0           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
    load_i: 120.0           work load gap_i: 0
705
    V_id: 5           li: 5.0           xi: 18.5           bow of i: 16.0           tail of i: 21.0           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: 60.0           work
    load_i: 60.0           work load gap_i: 0
706
    V_id: 6           li: 6.0           xi: 3.0           bow of i: 0.0           tail of i: 6.0           gama_i0: 1.0           gama_i1: 2.0
    .0             gama_i1 + 1: 3.0           gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 140.0           work load_i:
    140.0           work load gap_i: 0
707
708 Algorithm finished and the total CPU time: 195 s
709 End
710

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