

unknown

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80 cord_individual_obj[indivial_i,:] = [16. 4. 14. 18.]
81 cord_individual_obj[indivial_i,:] = [17. 4. 22. 26.]
82 cord_individual_obj[indivial_i,:] = [18. 3. 15. 18.]
83 cord_individual_obj[indivial_i,:] = [19. 4. 19. 23.]
84 cord_individual_obj[indivial_i,:] = [20. 5. 9. 14.]
85 cord_individual_obj[indivial_i,:] = [21. 4. 49. 53.]
86 cord_individual_obj[indivial_i,:] = [22. 4. 17. 21.]
87 cord_individual_obj[indivial_i,:] = [23. 4. 8. 12.]
88 cord_individual_obj[indivial_i,:] = [24. 5. 10. 15.]
89
90 min(cord_individual_obj[:,3]) = 11.0
91 historl_G_best_iter[iter,3] = 11.0
92 Begin iteration:
93
94 iter = 2
95 cord_individual_obj[indivial_i,:] = [ 0. 3. 51. 54.]
96 cord_individual_obj[indivial_i,:] = [ 1. 5. 48. 53.]
97 cord_individual_obj[indivial_i,:] = [ 2. 5. 33. 38.]
98 cord_individual_obj[indivial_i,:] = [ 3. 4. 42. 46.]
99 cord_individual_obj[indivial_i,:] = [ 4. 3. 54. 57.]
100 cord_individual_obj[indivial_i,:] = [ 5. 4. 27. 31.]
101 cord_individual_obj[indivial_i,:] = [ 6. 5. 20. 25.]
102 cord_individual_obj[indivial_i,:] = [ 7. 3. 7. 10.]
103 cord_individual_obj[indivial_i,:] = [ 8. 4. 26. 30.]
104 cord_individual_obj[indivial_i,:] = [ 9. 4. 50. 54.]
105 cord_individual_obj[indivial_i,:] = [10. 4. 56. 60.]
106 cord_individual_obj[indivial_i,:] = [11. 3. 15. 18.]
107 cord_individual_obj[indivial_i,:] = [12. 5. 18. 23.]
108 cord_individual_obj[indivial_i,:] = [13. 5. 18. 23.]
109 cord_individual_obj[indivial_i,:] = [14. 4. 42. 46.]
110 cord_individual_obj[indivial_i,:] = [15. 4. 66. 70.]
111 cord_individual_obj[indivial_i,:] = [16. 5. 8. 13.]
112 cord_individual_obj[indivial_i,:] = [17. 4. 37. 41.]
113 cord_individual_obj[indivial_i,:] = [18. 3. 16. 19.]
114 cord_individual_obj[indivial_i,:] = [19. 5. 42. 47.]
115 cord_individual_obj[indivial_i,:] = [20. 6. 33. 39.]
116 cord_individual_obj[indivial_i,:] = [21. 4. 7. 11.]
117 cord_individual_obj[indivial_i,:] = [22. 4. 36. 40.]
118 cord_individual_obj[indivial_i,:] = [23. 3. 29. 32.]
119 cord_individual_obj[indivial_i,:] = [24. 4. 28. 32.]
120
121 min(cord_individual_obj[:,3]) = 10.0
122 historl_G_best_iter[iter,3] = 10.0
123 Begin iteration:
124
125 iter = 3
126 cord_individual_obj[indivial_i,:] = [ 0. 4. 36. 40.]
127 cord_individual_obj[indivial_i,:] = [ 1. 3. 63. 66.]
128 cord_individual_obj[indivial_i,:] = [ 2. 4. 44. 48.]
129 cord_individual_obj[indivial_i,:] = [ 3. 4. 13. 17.]
130 cord_individual_obj[indivial_i,:] = [ 4. 4. 45. 49.]
131 cord_individual_obj[indivial_i,:] = [ 5. 4. 9. 13.]
132 cord_individual_obj[indivial_i,:] = [ 6. 3. 20. 23.]
133 cord_individual_obj[indivial_i,:] = [ 7. 3. 7. 10.]
134 cord_individual_obj[indivial_i,:] = [ 8. 4. 44. 48.]
135 cord_individual_obj[indivial_i,:] = [ 9. 3. 19. 22.]
136 cord_individual_obj[indivial_i,:] = [10. 3. 49. 52.]
137 cord_individual_obj[indivial_i,:] = [11. 3. 8. 11.]
138 cord_individual_obj[indivial_i,:] = [12. 4. 24. 28.]
139 cord_individual_obj[indivial_i,:] = [13. 4. 24. 28.]
140 cord_individual_obj[indivial_i,:] = [14. 2. 25. 27.]
141 cord_individual_obj[indivial_i,:] = [15. 3. 7. 10.]
142 cord_individual_obj[indivial_i,:] = [16. 5. 21. 26.]
143 cord_individual_obj[indivial_i,:] = [17. 4. 21. 25.]
144 cord_individual_obj[indivial_i,:] = [18. 4. 25. 29.]
145 cord_individual_obj[indivial_i,:] = [19. 4. 11. 15.]
146 cord_individual_obj[indivial_i,:] = [20. 4. 11. 15.]
147 cord_individual_obj[indivial_i,:] = [21. 3. 55. 58.]
148 cord_individual_obj[indivial_i,:] = [22. 3. 16. 19.]
149 cord_individual_obj[indivial_i,:] = [23. 4. 11. 15.]
150 cord_individual_obj[indivial_i,:] = [24. 5. 27. 32.]
151
152 min(cord_individual_obj[:,3]) = 10.0
153 historl_G_best_iter[iter,3] = 10.0
154 Begin iteration:
155
156 iter = 4
157 cord_individual_obj[indivial_i,:] = [ 0. 6. 15. 21.]
158 cord_individual_obj[indivial_i,:] = [ 1. 3. 7. 10.]
159 cord_individual_obj[indivial_i,:] = [ 2. 4. 16. 20.]
160 cord_individual_obj[indivial_i,:] = [ 3. 3. 54. 57.]
161 cord_individual_obj[indivial_i,:] = [ 4. 6. 60. 66.]
162 cord_individual_obj[indivial_i,:] = [ 5. 3. 15. 18.]
163 cord_individual_obj[indivial_i,:] = [ 6. 4. 20. 24.]

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164 cord_individual_obj[indivial_i,:] = [ 7. 3. 16. 19.]
165 cord_individual_obj[indivial_i,:] = [ 8. 3. 22. 25.]
166 cord_individual_obj[indivial_i,:] = [ 9. 4. 54. 58.]
167 cord_individual_obj[indivial_i,:] = [10. 4. 55. 59.]
168 cord_individual_obj[indivial_i,:] = [11. 3. 8. 11.]
169 cord_individual_obj[indivial_i,:] = [12. 4. 26. 30.]
170 cord_individual_obj[indivial_i,:] = [13. 4. 23. 27.]
171 cord_individual_obj[indivial_i,:] = [14. 3. 31. 34.]
172 cord_individual_obj[indivial_i,:] = [15. 4. 34. 38.]
173 cord_individual_obj[indivial_i,:] = [16. 5. 9. 14.]
174 cord_individual_obj[indivial_i,:] = [17. 4. 15. 19.]
175 cord_individual_obj[indivial_i,:] = [18. 3. 16. 19.]
176 cord_individual_obj[indivial_i,:] = [19. 4. 33. 37.]
177 cord_individual_obj[indivial_i,:] = [20. 5. 15. 20.]
178 cord_individual_obj[indivial_i,:] = [21. 4. 20. 24.]
179 cord_individual_obj[indivial_i,:] = [22. 4. 46. 50.]
180 cord_individual_obj[indivial_i,:] = [23. 4. 12. 16.]
181 cord_individual_obj[indivial_i,:] = [24. 3. 53. 56.]
182
183 min(cord_individual_obj[:,3]) = 10.0
184 historl_G_best_iter[iter,3] = 10.0
185 Begin iteration:
186
187 iter = 5
188 cord_individual_obj[indivial_i,:] = [ 0. 5. 19. 24.]
189 cord_individual_obj[indivial_i,:] = [ 1. 3. 51. 54.]
190 cord_individual_obj[indivial_i,:] = [ 2. 4. 51. 55.]
191 cord_individual_obj[indivial_i,:] = [ 3. 3. 25. 28.]
192 cord_individual_obj[indivial_i,:] = [ 4. 3. 7. 10.]
193 cord_individual_obj[indivial_i,:] = [ 5. 3. 15. 18.]
194 cord_individual_obj[indivial_i,:] = [ 6. 4. 12. 16.]
195 cord_individual_obj[indivial_i,:] = [ 7. 3. 9. 12.]
196 cord_individual_obj[indivial_i,:] = [ 8. 4. 16. 20.]
197 cord_individual_obj[indivial_i,:] = [ 9. 3. 62. 65.]
198 cord_individual_obj[indivial_i,:] = [10. 3. 60. 63.]
199 cord_individual_obj[indivial_i,:] = [11. 3. 18. 21.]
200 cord_individual_obj[indivial_i,:] = [12. 4. 12. 16.]
201 cord_individual_obj[indivial_i,:] = [13. 4. 25. 29.]
202 cord_individual_obj[indivial_i,:] = [14. 3. 37. 40.]
203 cord_individual_obj[indivial_i,:] = [15. 5. 62. 67.]
204 cord_individual_obj[indivial_i,:] = [16. 6. 10. 16.]
205 cord_individual_obj[indivial_i,:] = [17. 4. 9. 13.]
206 cord_individual_obj[indivial_i,:] = [18. 3. 16. 19.]
207 cord_individual_obj[indivial_i,:] = [19. 4. 39. 43.]
208 cord_individual_obj[indivial_i,:] = [20. 3. 8. 11.]
209 cord_individual_obj[indivial_i,:] = [21. 2. 50. 52.]
210 cord_individual_obj[indivial_i,:] = [22. 3. 31. 34.]
211 cord_individual_obj[indivial_i,:] = [23. 4. 17. 21.]
212 cord_individual_obj[indivial_i,:] = [24. 5. 10. 15.]
213
214 min(cord_individual_obj[:,3]) = 10.0
215 historl_G_best_iter[iter,3] = 10.0
216 Begin iteration:
217
218 iter = 6
219 cord_individual_obj[indivial_i,:] = [ 0. 4. 12. 16.]
220 cord_individual_obj[indivial_i,:] = [ 1. 3. 52. 55.]
221 cord_individual_obj[indivial_i,:] = [ 2. 4. 14. 18.]
222 cord_individual_obj[indivial_i,:] = [ 3. 3. 67. 70.]
223 cord_individual_obj[indivial_i,:] = [ 4. 3. 25. 28.]
224 cord_individual_obj[indivial_i,:] = [ 5. 3. 22. 25.]
225 cord_individual_obj[indivial_i,:] = [ 6. 4. 16. 20.]
226 cord_individual_obj[indivial_i,:] = [ 7. 3. 9. 12.]
227 cord_individual_obj[indivial_i,:] = [ 8. 3. 7. 10.]
228 cord_individual_obj[indivial_i,:] = [ 9. 3. 62. 65.]
229 cord_individual_obj[indivial_i,:] = [10. 4. 51. 55.]
230 cord_individual_obj[indivial_i,:] = [11. 3. 13. 16.]
231 cord_individual_obj[indivial_i,:] = [12. 4. 27. 31.]
232 cord_individual_obj[indivial_i,:] = [13. 4. 9. 13.]
233 cord_individual_obj[indivial_i,:] = [14. 3. 28. 31.]
234 cord_individual_obj[indivial_i,:] = [15. 3. 7. 10.]
235 cord_individual_obj[indivial_i,:] = [16. 4. 8. 12.]
236 cord_individual_obj[indivial_i,:] = [17. 4. 9. 13.]
237 cord_individual_obj[indivial_i,:] = [18. 3. 30. 33.]
238 cord_individual_obj[indivial_i,:] = [19. 4. 27. 31.]
239 cord_individual_obj[indivial_i,:] = [20. 3. 17. 20.]
240 cord_individual_obj[indivial_i,:] = [21. 4. 37. 41.]
241 cord_individual_obj[indivial_i,:] = [22. 3. 44. 47.]
242 cord_individual_obj[indivial_i,:] = [23. 4. 16. 20.]
243 cord_individual_obj[indivial_i,:] = [24. 3. 23. 26.]
244
245 min(cord_individual_obj[:,3]) = 10.0
246 historl_G_best_iter[iter,3] = 10.0
247 Begin iteration:

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248
249 iter = 7
250 cord_individual_obj[indivial_i, :] = [ 0. 3. 30. 33.]
251 cord_individual_obj[indivial_i, :] = [ 1. 4. 18. 22.]
252 cord_individual_obj[indivial_i, :] = [ 2. 5. 26. 31.]
253 cord_individual_obj[indivial_i, :] = [ 3. 3. 7. 10.]
254 cord_individual_obj[indivial_i, :] = [ 4. 4. 17. 21.]
255 cord_individual_obj[indivial_i, :] = [ 5. 3. 31. 34.]
256 cord_individual_obj[indivial_i, :] = [ 6. 4. 13. 17.]
257 cord_individual_obj[indivial_i, :] = [ 7. 3. 8. 11.]
258 cord_individual_obj[indivial_i, :] = [ 8. 3. 25. 28.]
259 cord_individual_obj[indivial_i, :] = [ 9. 4. 25. 29.]
260 cord_individual_obj[indivial_i, :] = [10. 4. 28. 32.]
261 cord_individual_obj[indivial_i, :] = [11. 3. 23. 26.]
262 cord_individual_obj[indivial_i, :] = [12. 4. 11. 15.]
263 cord_individual_obj[indivial_i, :] = [13. 5. 35. 40.]
264 cord_individual_obj[indivial_i, :] = [14. 5. 18. 23.]
265 cord_individual_obj[indivial_i, :] = [15. 5. 34. 39.]
266 cord_individual_obj[indivial_i, :] = [16. 4. 20. 24.]
267 cord_individual_obj[indivial_i, :] = [17. 3. 27. 30.]
268 cord_individual_obj[indivial_i, :] = [18. 3. 9. 12.]
269 cord_individual_obj[indivial_i, :] = [19. 4. 28. 32.]
270 cord_individual_obj[indivial_i, :] = [20. 5. 45. 50.]
271 cord_individual_obj[indivial_i, :] = [21. 4. 18. 22.]
272 cord_individual_obj[indivial_i, :] = [22. 4. 27. 31.]
273 cord_individual_obj[indivial_i, :] = [23. 4. 25. 29.]
274 cord_individual_obj[indivial_i, :] = [24. 3. 24. 27.]
275

276 min(cord_individual_obj[:, 3]) = 10.0
277 historl_G_best_iter[iter, 3] = 10.0
278 Begin iteration:
279
280 iter = 8
281 cord_individual_obj[indivial_i, :] = [ 0. 3. 25. 28.]
282 cord_individual_obj[indivial_i, :] = [ 1. 3. 25. 28.]
283 cord_individual_obj[indivial_i, :] = [ 2. 4. 29. 33.]
284 cord_individual_obj[indivial_i, :] = [ 3. 3. 25. 28.]
285 cord_individual_obj[indivial_i, :] = [ 4. 3. 32. 35.]
286 cord_individual_obj[indivial_i, :] = [ 5. 3. 26. 29.]
287 cord_individual_obj[indivial_i, :] = [ 6. 3. 26. 29.]
288 cord_individual_obj[indivial_i, :] = [ 7. 3. 26. 29.]
289 cord_individual_obj[indivial_i, :] = [ 8. 3. 25. 28.]
290 cord_individual_obj[indivial_i, :] = [ 9. 3. 26. 29.]
291 cord_individual_obj[indivial_i, :] = [10. 3. 26. 29.]
292 cord_individual_obj[indivial_i, :] = [11. 3. 26. 29.]
293 cord_individual_obj[indivial_i, :] = [12. 4. 19. 23.]
294 cord_individual_obj[indivial_i, :] = [13. 4. 32. 36.]
295 cord_individual_obj[indivial_i, :] = [14. 3. 26. 29.]
296 cord_individual_obj[indivial_i, :] = [15. 4. 28. 32.]
297 cord_individual_obj[indivial_i, :] = [16. 3. 32. 35.]
298 cord_individual_obj[indivial_i, :] = [17. 3. 25. 28.]
299 cord_individual_obj[indivial_i, :] = [18. 4. 30. 34.]
300 cord_individual_obj[indivial_i, :] = [19. 4. 30. 34.]
301 cord_individual_obj[indivial_i, :] = [20. 3. 7. 10.]
302 cord_individual_obj[indivial_i, :] = [21. 3. 32. 35.]
303 cord_individual_obj[indivial_i, :] = [22. 2. 64. 66.]
304 cord_individual_obj[indivial_i, :] = [23. 4. 30. 34.]
305 cord_individual_obj[indivial_i, :] = [24. 4. 32. 36.]
306

307 min(cord_individual_obj[:, 3]) = 10.0
308 historl_G_best_iter[iter, 3] = 10.0
309 Begin iteration:
310
311 iter = 9
312 cord_individual_obj[indivial_i, :] = [ 0. 3. 27. 30.]
313 cord_individual_obj[indivial_i, :] = [ 1. 3. 73. 76.]
314 cord_individual_obj[indivial_i, :] = [ 2. 4. 10. 14.]
315 cord_individual_obj[indivial_i, :] = [ 3. 3. 30. 33.]
316 cord_individual_obj[indivial_i, :] = [ 4. 3. 35. 38.]
317 cord_individual_obj[indivial_i, :] = [ 5. 4. 27. 31.]
318 cord_individual_obj[indivial_i, :] = [ 6. 2. 45. 47.]
319 cord_individual_obj[indivial_i, :] = [ 7. 4. 10. 14.]
320 cord_individual_obj[indivial_i, :] = [ 8. 5. 8. 13.]
321 cord_individual_obj[indivial_i, :] = [ 9. 3. 42. 45.]
322 cord_individual_obj[indivial_i, :] = [10. 4. 31. 35.]
323 cord_individual_obj[indivial_i, :] = [11. 2. 22. 24.]
324 cord_individual_obj[indivial_i, :] = [12. 5. 15. 20.]
325 cord_individual_obj[indivial_i, :] = [13. 4. 15. 19.]
326 cord_individual_obj[indivial_i, :] = [14. 3. 9. 12.]
327 cord_individual_obj[indivial_i, :] = [15. 4. 24. 28.]
328 cord_individual_obj[indivial_i, :] = [16. 5. 9. 14.]
329 cord_individual_obj[indivial_i, :] = [17. 4. 10. 14.]
330 cord_individual_obj[indivial_i, :] = [18. 4. 41. 45.]
331 cord_individual_obj[indivial_i, :] = [19. 4. 39. 43.]

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332 cord_individual_obj[indivial_i,:] = [20. 4. 43. 47.]
333 cord_individual_obj[indivial_i,:] = [21. 4. 26. 30.]
334 cord_individual_obj[indivial_i,:] = [22. 3. 7. 10.]
335 cord_individual_obj[indivial_i,:] = [23. 5. 25. 30.]
336 cord_individual_obj[indivial_i,:] = [24. 3. 12. 15.]
337
338 min(cord_individual_obj[:,3]) = 10.0
339 histol_G_best_iter[iter,3] = 10.0
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. 7. 10.]
345 cord_individual_obj[indivial_i,:] = [ 2. 4. 39. 43.]
346 cord_individual_obj[indivial_i,:] = [ 3. 5. 33. 38.]
347 cord_individual_obj[indivial_i,:] = [ 4. 3. 9. 12.]
348 cord_individual_obj[indivial_i,:] = [ 5. 2. 60. 62.]
349 cord_individual_obj[indivial_i,:] = [ 6. 5. 7. 12.]
350 cord_individual_obj[indivial_i,:] = [ 7. 3. 32. 35.]
351 cord_individual_obj[indivial_i,:] = [ 8. 3. 19. 22.]
352 cord_individual_obj[indivial_i,:] = [ 9. 3. 37. 40.]
353 cord_individual_obj[indivial_i,:] = [10. 3. 24. 27.]
354 cord_individual_obj[indivial_i,:] = [11. 2. 23. 25.]
355 cord_individual_obj[indivial_i,:] = [12. 4. 7. 11.]
356 cord_individual_obj[indivial_i,:] = [13. 4. 18. 22.]
357 cord_individual_obj[indivial_i,:] = [14. 4. 33. 37.]
358 cord_individual_obj[indivial_i,:] = [15. 4. 51. 55.]
359 cord_individual_obj[indivial_i,:] = [16. 3. 9. 12.]
360 cord_individual_obj[indivial_i,:] = [17. 4. 57. 61.]
361 cord_individual_obj[indivial_i,:] = [18. 3. 15. 18.]
362 cord_individual_obj[indivial_i,:] = [19. 3. 24. 27.]
363 cord_individual_obj[indivial_i,:] = [20. 4. 8. 12.]
364 cord_individual_obj[indivial_i,:] = [21. 3. 18. 21.]
365 cord_individual_obj[indivial_i,:] = [22. 3. 60. 63.]
366 cord_individual_obj[indivial_i,:] = [23. 4. 42. 46.]
367 cord_individual_obj[indivial_i,:] = [24. 4. 27. 31.]
368
369 min(cord_individual_obj[:,3]) = 10.0
370 histol_G_best_iter[iter,3] = 10.0
371 Begin iteration:
372
373 iter = 11
374 cord_individual_obj[indivial_i,:] = [ 0. 3. 25. 28.]
375 cord_individual_obj[indivial_i,:] = [ 1. 3. 26. 29.]
376 cord_individual_obj[indivial_i,:] = [ 2. 4. 19. 23.]
377 cord_individual_obj[indivial_i,:] = [ 3. 4. 26. 30.]
378 cord_individual_obj[indivial_i,:] = [ 4. 3. 26. 29.]
379 cord_individual_obj[indivial_i,:] = [ 5. 4. 8. 12.]
380 cord_individual_obj[indivial_i,:] = [ 6. 3. 24. 27.]
381 cord_individual_obj[indivial_i,:] = [ 7. 4. 18. 22.]
382 cord_individual_obj[indivial_i,:] = [ 8. 3. 25. 28.]
383 cord_individual_obj[indivial_i,:] = [ 9. 4. 33. 37.]
384 cord_individual_obj[indivial_i,:] = [10. 3. 27. 30.]
385 cord_individual_obj[indivial_i,:] = [11. 3. 8. 11.]
386 cord_individual_obj[indivial_i,:] = [12. 4. 19. 23.]
387 cord_individual_obj[indivial_i,:] = [13. 4. 29. 33.]
388 cord_individual_obj[indivial_i,:] = [14. 3. 49. 52.]
389 cord_individual_obj[indivial_i,:] = [15. 5. 35. 40.]
390 cord_individual_obj[indivial_i,:] = [16. 4. 27. 31.]
391 cord_individual_obj[indivial_i,:] = [17. 4. 24. 28.]
392 cord_individual_obj[indivial_i,:] = [18. 4. 20. 24.]
393 cord_individual_obj[indivial_i,:] = [19. 4. 28. 32.]
394 cord_individual_obj[indivial_i,:] = [20. 4. 63. 67.]
395 cord_individual_obj[indivial_i,:] = [21. 4. 40. 44.]
396 cord_individual_obj[indivial_i,:] = [22. 3. 7. 10.]
397 cord_individual_obj[indivial_i,:] = [23. 4. 8. 12.]
398 cord_individual_obj[indivial_i,:] = [24. 5. 28. 33.]
399
400 min(cord_individual_obj[:,3]) = 10.0
401 histol_G_best_iter[iter,3] = 10.0
402 Begin iteration:
403
404 iter = 12
405 cord_individual_obj[indivial_i,:] = [ 0. 3. 28. 31.]
406 cord_individual_obj[indivial_i,:] = [ 1. 3. 59. 62.]
407 cord_individual_obj[indivial_i,:] = [ 2. 4. 28. 32.]
408 cord_individual_obj[indivial_i,:] = [ 3. 4. 26. 30.]
409 cord_individual_obj[indivial_i,:] = [ 4. 3. 25. 28.]
410 cord_individual_obj[indivial_i,:] = [ 5. 4. 16. 20.]
411 cord_individual_obj[indivial_i,:] = [ 6. 3. 26. 29.]
412 cord_individual_obj[indivial_i,:] = [ 7. 4. 27. 31.]
413 cord_individual_obj[indivial_i,:] = [ 8. 3. 26. 29.]
414 cord_individual_obj[indivial_i,:] = [ 9. 3. 26. 29.]
415 cord_individual_obj[indivial_i,:] = [10. 4. 35. 39.]

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```

416 cord_individual_obj[indivial_i,:] = [11. 3. 26. 29.]
417 cord_individual_obj[indivial_i,:] = [12. 4. 30. 34.]
418 cord_individual_obj[indivial_i,:] = [13. 4. 30. 34.]
419 cord_individual_obj[indivial_i,:] = [14. 4. 33. 37.]
420 cord_individual_obj[indivial_i,:] = [15. 4. 33. 37.]
421 cord_individual_obj[indivial_i,:] = [16. 3. 26. 29.]
422 cord_individual_obj[indivial_i,:] = [17. 3. 25. 28.]
423 cord_individual_obj[indivial_i,:] = [18. 4. 30. 34.]
424 cord_individual_obj[indivial_i,:] = [19. 5. 21. 26.]
425 cord_individual_obj[indivial_i,:] = [20. 3. 7. 10.]
426 cord_individual_obj[indivial_i,:] = [21. 5. 23. 28.]
427 cord_individual_obj[indivial_i,:] = [22. 3. 29. 32.]
428 cord_individual_obj[indivial_i,:] = [23. 4. 25. 29.]
429 cord_individual_obj[indivial_i,:] = [24. 4. 66. 70.]
430
431 min(cord_individual_obj[:,3]) = 10.0
432 histol_G_best_iter[iter,3] = 10.0
433 Begin iteration:
434
435 iter = 13
436 cord_individual_obj[indivial_i,:] = [ 0. 3. 32. 35.]
437 cord_individual_obj[indivial_i,:] = [ 1. 3. 38. 41.]
438 cord_individual_obj[indivial_i,:] = [ 2. 4. 20. 24.]
439 cord_individual_obj[indivial_i,:] = [ 3. 4. 19. 23.]
440 cord_individual_obj[indivial_i,:] = [ 4. 3. 32. 35.]
441 cord_individual_obj[indivial_i,:] = [ 5. 3. 7. 10.]
442 cord_individual_obj[indivial_i,:] = [ 6. 3. 26. 29.]
443 cord_individual_obj[indivial_i,:] = [ 7. 4. 19. 23.]
444 cord_individual_obj[indivial_i,:] = [ 8. 3. 25. 28.]
445 cord_individual_obj[indivial_i,:] = [ 9. 3. 26. 29.]
446 cord_individual_obj[indivial_i,:] = [10. 3. 32. 35.]
447 cord_individual_obj[indivial_i,:] = [11. 3. 26. 29.]
448 cord_individual_obj[indivial_i,:] = [12. 3. 26. 29.]
449 cord_individual_obj[indivial_i,:] = [13. 4. 20. 24.]
450 cord_individual_obj[indivial_i,:] = [14. 4. 33. 37.]
451 cord_individual_obj[indivial_i,:] = [15. 4. 33. 37.]
452 cord_individual_obj[indivial_i,:] = [16. 4. 29. 33.]
453 cord_individual_obj[indivial_i,:] = [17. 4. 17. 21.]
454 cord_individual_obj[indivial_i,:] = [18. 4. 30. 34.]
455 cord_individual_obj[indivial_i,:] = [19. 5. 20. 25.]
456 cord_individual_obj[indivial_i,:] = [20. 5. 33. 38.]
457 cord_individual_obj[indivial_i,:] = [21. 5. 33. 38.]
458 cord_individual_obj[indivial_i,:] = [22. 4. 29. 33.]
459 cord_individual_obj[indivial_i,:] = [23. 3. 28. 31.]
460 cord_individual_obj[indivial_i,:] = [24. 3. 7. 10.]
461
462 min(cord_individual_obj[:,3]) = 10.0
463 histol_G_best_iter[iter,3] = 10.0
464 Begin iteration:
465
466 iter = 14
467 cord_individual_obj[indivial_i,:] = [ 0. 5. 6. 11.]
468 cord_individual_obj[indivial_i,:] = [ 1. 3. 7. 10.]
469 cord_individual_obj[indivial_i,:] = [ 2. 5. 13. 18.]
470 cord_individual_obj[indivial_i,:] = [ 3. 5. 25. 30.]
471 cord_individual_obj[indivial_i,:] = [ 4. 3. 20. 23.]
472 cord_individual_obj[indivial_i,:] = [ 5. 3. 26. 29.]
473 cord_individual_obj[indivial_i,:] = [ 6. 5. 21. 26.]
474 cord_individual_obj[indivial_i,:] = [ 7. 4. 11. 15.]
475 cord_individual_obj[indivial_i,:] = [ 8. 4. 33. 37.]
476 cord_individual_obj[indivial_i,:] = [ 9. 3. 12. 15.]
477 cord_individual_obj[indivial_i,:] = [10. 5. 16. 21.]
478 cord_individual_obj[indivial_i,:] = [11. 3. 22. 25.]
479 cord_individual_obj[indivial_i,:] = [12. 6. 27. 33.]
480 cord_individual_obj[indivial_i,:] = [13. 5. 9. 14.]
481 cord_individual_obj[indivial_i,:] = [14. 5. 8. 13.]
482 cord_individual_obj[indivial_i,:] = [15. 4. 44. 48.]
483 cord_individual_obj[indivial_i,:] = [16. 5. 11. 16.]
484 cord_individual_obj[indivial_i,:] = [17. 4. 9. 13.]
485 cord_individual_obj[indivial_i,:] = [18. 5. 50. 55.]
486 cord_individual_obj[indivial_i,:] = [19. 5. 9. 14.]
487 cord_individual_obj[indivial_i,:] = [20. 4. 9. 13.]
488 cord_individual_obj[indivial_i,:] = [21. 5. 37. 42.]
489 cord_individual_obj[indivial_i,:] = [22. 3. 21. 24.]
490 cord_individual_obj[indivial_i,:] = [23. 5. 25. 30.]
491 cord_individual_obj[indivial_i,:] = [24. 4. 34. 38.]
492
493 min(cord_individual_obj[:,3]) = 10.0
494 histol_G_best_iter[iter,3] = 10.0
495 Begin iteration:
496
497 iter = 15
498 cord_individual_obj[indivial_i,:] = [ 0. 5. 25. 30.]
499 cord_individual_obj[indivial_i,:] = [ 1. 4. 39. 43.]

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500 cord_individual_obj[indivial_i, :] = [ 2. 5. 42. 47.]
501 cord_individual_obj[indivial_i, :] = [ 3. 5. 16. 21.]
502 cord_individual_obj[indivial_i, :] = [ 4. 4. 50. 54.]
503 cord_individual_obj[indivial_i, :] = [ 5. 3. 25. 28.]
504 cord_individual_obj[indivial_i, :] = [ 6. 4. 21. 25.]
505 cord_individual_obj[indivial_i, :] = [ 7. 3. 29. 32.]
506 cord_individual_obj[indivial_i, :] = [ 8. 4. 24. 28.]
507 cord_individual_obj[indivial_i, :] = [ 9. 3. 19. 22.]
508 cord_individual_obj[indivial_i, :] = [10. 5. 44. 49.]
509 cord_individual_obj[indivial_i, :] = [11. 3. 59. 62.]
510 cord_individual_obj[indivial_i, :] = [12. 4. 26. 30.]
511 cord_individual_obj[indivial_i, :] = [13. 4. 55. 59.]
512 cord_individual_obj[indivial_i, :] = [14. 3. 45. 48.]
513 cord_individual_obj[indivial_i, :] = [15. 6. 26. 32.]
514 cord_individual_obj[indivial_i, :] = [16. 5. 49. 54.]
515 cord_individual_obj[indivial_i, :] = [17. 3. 55. 58.]
516 cord_individual_obj[indivial_i, :] = [18. 3. 7. 10.]
517 cord_individual_obj[indivial_i, :] = [19. 5. 26. 31.]
518 cord_individual_obj[indivial_i, :] = [20. 6. 31. 37.]
519 cord_individual_obj[indivial_i, :] = [21. 3. 28. 31.]
520 cord_individual_obj[indivial_i, :] = [22. 5. 37. 42.]
521 cord_individual_obj[indivial_i, :] = [23. 4. 31. 35.]
522 cord_individual_obj[indivial_i, :] = [24. 3. 47. 50.]
523
524 min(cord_individual_obj[:, 3]) = 10.0
525 histol_G_best_iter[iter, 3] = 10.0
526 Begin iteration:
527
528 iter = 16
529 cord_individual_obj[indivial_i, :] = [ 0. 4. 38. 42.]
530 cord_individual_obj[indivial_i, :] = [ 1. 4. 29. 33.]
531 cord_individual_obj[indivial_i, :] = [ 2. 4. 30. 34.]
532 cord_individual_obj[indivial_i, :] = [ 3. 4. 27. 31.]
533 cord_individual_obj[indivial_i, :] = [ 4. 2. 61. 63.]
534 cord_individual_obj[indivial_i, :] = [ 5. 3. 26. 29.]
535 cord_individual_obj[indivial_i, :] = [ 6. 5. 43. 48.]
536 cord_individual_obj[indivial_i, :] = [ 7. 5. 16. 21.]
537 cord_individual_obj[indivial_i, :] = [ 8. 3. 31. 34.]
538 cord_individual_obj[indivial_i, :] = [ 9. 4. 49. 53.]
539 cord_individual_obj[indivial_i, :] = [10. 5. 20. 25.]
540 cord_individual_obj[indivial_i, :] = [11. 3. 7. 10.]
541 cord_individual_obj[indivial_i, :] = [12. 3. 43. 46.]
542 cord_individual_obj[indivial_i, :] = [13. 5. 61. 66.]
543 cord_individual_obj[indivial_i, :] = [14. 4. 52. 56.]
544 cord_individual_obj[indivial_i, :] = [15. 3. 43. 46.]
545 cord_individual_obj[indivial_i, :] = [16. 4. 61. 65.]
546 cord_individual_obj[indivial_i, :] = [17. 3. 52. 55.]
547 cord_individual_obj[indivial_i, :] = [18. 3. 28. 31.]
548 cord_individual_obj[indivial_i, :] = [19. 4. 31. 35.]
549 cord_individual_obj[indivial_i, :] = [20. 5. 54. 59.]
550 cord_individual_obj[indivial_i, :] = [21. 4. 30. 34.]
551 cord_individual_obj[indivial_i, :] = [22. 5. 34. 39.]
552 cord_individual_obj[indivial_i, :] = [23. 3. 62. 65.]
553 cord_individual_obj[indivial_i, :] = [24. 5. 47. 52.]
554
555 min(cord_individual_obj[:, 3]) = 10.0
556 histol_G_best_iter[iter, 3] = 10.0
557 Begin iteration:
558
559 iter = 17
560 cord_individual_obj[indivial_i, :] = [ 0. 3. 52. 55.]
561 cord_individual_obj[indivial_i, :] = [ 1. 4. 43. 47.]
562 cord_individual_obj[indivial_i, :] = [ 2. 5. 31. 36.]
563 cord_individual_obj[indivial_i, :] = [ 3. 4. 36. 40.]
564 cord_individual_obj[indivial_i, :] = [ 4. 4. 64. 68.]
565 cord_individual_obj[indivial_i, :] = [ 5. 4. 62. 66.]
566 cord_individual_obj[indivial_i, :] = [ 6. 3. 43. 46.]
567 cord_individual_obj[indivial_i, :] = [ 7. 4. 27. 31.]
568 cord_individual_obj[indivial_i, :] = [ 8. 4. 31. 35.]
569 cord_individual_obj[indivial_i, :] = [ 9. 3. 37. 40.]
570 cord_individual_obj[indivial_i, :] = [10. 4. 38. 42.]
571 cord_individual_obj[indivial_i, :] = [11. 3. 58. 61.]
572 cord_individual_obj[indivial_i, :] = [12. 3. 21. 24.]
573 cord_individual_obj[indivial_i, :] = [13. 3. 7. 10.]
574 cord_individual_obj[indivial_i, :] = [14. 3. 21. 24.]
575 cord_individual_obj[indivial_i, :] = [15. 4. 66. 70.]
576 cord_individual_obj[indivial_i, :] = [16. 5. 20. 25.]
577 cord_individual_obj[indivial_i, :] = [17. 3. 23. 26.]
578 cord_individual_obj[indivial_i, :] = [18. 3. 38. 41.]
579 cord_individual_obj[indivial_i, :] = [19. 5. 31. 36.]
580 cord_individual_obj[indivial_i, :] = [20. 4. 34. 38.]
581 cord_individual_obj[indivial_i, :] = [21. 3. 38. 41.]
582 cord_individual_obj[indivial_i, :] = [22. 3. 44. 47.]
583 cord_individual_obj[indivial_i, :] = [23. 5. 21. 26.]

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unknown

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584     cord_individual_obj[indivial_i, :] = [24. 2. 64. 66.]  
585  
586     min(cord_individual_obj[:, 3]) = 10.0  
587     historl_G_best_iter[iter, 3] = 10.0  
588 Begin iteration:  
589  
590 iter = 18  
591     cord_individual_obj[indivial_i, :] = [ 0. 4. 38. 42.]  
592     cord_individual_obj[indivial_i, :] = [ 1. 4. 23. 27.]  
593     cord_individual_obj[indivial_i, :] = [ 2. 4. 29. 33.]  
594     cord_individual_obj[indivial_i, :] = [ 3. 4. 43. 47.]  
595     cord_individual_obj[indivial_i, :] = [ 4. 2. 49. 51.]  
596     cord_individual_obj[indivial_i, :] = [ 5. 3. 27. 30.]  
597     cord_individual_obj[indivial_i, :] = [ 6. 4. 36. 40.]  
598     cord_individual_obj[indivial_i, :] = [ 7. 5. 27. 32.]  
599     cord_individual_obj[indivial_i, :] = [ 8. 4. 23. 27.]  
600     cord_individual_obj[indivial_i, :] = [ 9. 3. 36. 39.]  
601     cord_individual_obj[indivial_i, :] = [10. 3. 36. 39.]  
602     cord_individual_obj[indivial_i, :] = [11. 3. 58. 61.]  
603     cord_individual_obj[indivial_i, :] = [12. 3. 53. 56.]  
604     cord_individual_obj[indivial_i, :] = [13. 6. 53. 59.]  
605     cord_individual_obj[indivial_i, :] = [14. 4. 52. 56.]  
606     cord_individual_obj[indivial_i, :] = [15. 3. 7. 10.]  
607     cord_individual_obj[indivial_i, :] = [16. 4. 61. 65.]  
608     cord_individual_obj[indivial_i, :] = [17. 3. 31. 34.]  
609     cord_individual_obj[indivial_i, :] = [18. 3. 44. 47.]  
610     cord_individual_obj[indivial_i, :] = [19. 4. 37. 41.]  
611     cord_individual_obj[indivial_i, :] = [20. 4. 35. 39.]  
612     cord_individual_obj[indivial_i, :] = [21. 4. 54. 58.]  
613     cord_individual_obj[indivial_i, :] = [22. 3. 27. 30.]  
614     cord_individual_obj[indivial_i, :] = [23. 3. 62. 65.]  
615     cord_individual_obj[indivial_i, :] = [24. 4. 47. 51.]  
616  
617     min(cord_individual_obj[:, 3]) = 10.0  
618     historl_G_best_iter[iter, 3] = 10.0  
619 Begin iteration:  
620  
621 iter = 19  
622     cord_individual_obj[indivial_i, :] = [ 0. 3. 52. 55.]  
623     cord_individual_obj[indivial_i, :] = [ 1. 3. 41. 44.]  
624     cord_individual_obj[indivial_i, :] = [ 2. 5. 43. 48.]  
625     cord_individual_obj[indivial_i, :] = [ 3. 3. 35. 38.]  
626     cord_individual_obj[indivial_i, :] = [ 4. 4. 33. 37.]  
627     cord_individual_obj[indivial_i, :] = [ 5. 4. 62. 66.]  
628     cord_individual_obj[indivial_i, :] = [ 6. 3. 37. 40.]  
629     cord_individual_obj[indivial_i, :] = [ 7. 3. 53. 56.]  
630     cord_individual_obj[indivial_i, :] = [ 8. 4. 55. 59.]  
631     cord_individual_obj[indivial_i, :] = [ 9. 3. 54. 57.]  
632     cord_individual_obj[indivial_i, :] = [10. 4. 39. 43.]  
633     cord_individual_obj[indivial_i, :] = [11. 4. 23. 27.]  
634     cord_individual_obj[indivial_i, :] = [12. 4. 25. 29.]  
635     cord_individual_obj[indivial_i, :] = [13. 4. 26. 30.]  
636     cord_individual_obj[indivial_i, :] = [14. 3. 48. 51.]  
637     cord_individual_obj[indivial_i, :] = [15. 3. 43. 46.]  
638     cord_individual_obj[indivial_i, :] = [16. 3. 7. 10.]  
639     cord_individual_obj[indivial_i, :] = [17. 3. 22. 25.]  
640     cord_individual_obj[indivial_i, :] = [18. 3. 46. 49.]  
641     cord_individual_obj[indivial_i, :] = [19. 4. 29. 33.]  
642     cord_individual_obj[indivial_i, :] = [20. 3. 39. 42.]  
643     cord_individual_obj[indivial_i, :] = [21. 4. 22. 26.]  
644     cord_individual_obj[indivial_i, :] = [22. 4. 40. 44.]  
645     cord_individual_obj[indivial_i, :] = [23. 5. 50. 55.]  
646     cord_individual_obj[indivial_i, :] = [24. 3. 59. 62.]  
647  
648     min(cord_individual_obj[:, 3]) = 10.0  
649     historl_G_best_iter[iter, 3] = 10.0  
650 Begin iteration:  
651  
652 iter = 20  
653     cord_individual_obj[indivial_i, :] = [ 0. 4. 38. 42.]  
654     cord_individual_obj[indivial_i, :] = [ 1. 4. 38. 42.]  
655     cord_individual_obj[indivial_i, :] = [ 2. 4. 27. 31.]  
656     cord_individual_obj[indivial_i, :] = [ 3. 5. 35. 40.]  
657     cord_individual_obj[indivial_i, :] = [ 4. 3. 64. 67.]  
658     cord_individual_obj[indivial_i, :] = [ 5. 3. 7. 10.]  
659     cord_individual_obj[indivial_i, :] = [ 6. 5. 43. 48.]  
660     cord_individual_obj[indivial_i, :] = [ 7. 4. 48. 52.]  
661     cord_individual_obj[indivial_i, :] = [ 8. 4. 30. 34.]  
662     cord_individual_obj[indivial_i, :] = [ 9. 4. 49. 53.]  
663     cord_individual_obj[indivial_i, :] = [10. 3. 43. 46.]  
664     cord_individual_obj[indivial_i, :] = [11. 2. 72. 74.]  
665     cord_individual_obj[indivial_i, :] = [12. 3. 5. 8.]  
666     cord_individual_obj[indivial_i, :] = [13. 5. 55. 60.]  
667     cord_individual_obj[indivial_i, :] = [14. 4. 52. 56.]
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668 cord_individual_obj[indivial_i,:] = [15. 4. 65. 69.]
669 cord_individual_obj[indivial_i,:] = [16. 4. 60. 64.]
670 cord_individual_obj[indivial_i,:] = [17. 3. 47. 50.]
671 cord_individual_obj[indivial_i,:] = [18. 3. 28. 31.]
672 cord_individual_obj[indivial_i,:] = [19. 4. 23. 27.]
673 cord_individual_obj[indivial_i,:] = [20. 3. 32. 35.]
674 cord_individual_obj[indivial_i,:] = [21. 4. 46. 50.]
675 cord_individual_obj[indivial_i,:] = [22. 5. 36. 41.]
676 cord_individual_obj[indivial_i,:] = [23. 3. 62. 65.]
677 cord_individual_obj[indivial_i,:] = [24. 4. 47. 51.]
678
679 min(cord_individual_obj[:, 3]) = 8.0
680 historl_G_best_iter[iter, 3] = 8.0
681 Iteration calculate over
682
683
684
685
686 All item are in Bin and:
687 Bin area = 1080
688 Real_area = 96.0
689 Proportion_of_area = 0.0888888888888889
690 BEST_CHROM =
691     berth: [24. 11.5 13.5 4.5 17.5 24.5 10.5 4. ]
692     time: [1. 0. 1. 1. 0. 0. 2. 0.]
693     num_QC: [2. 3. 4. 3. 4. 5. 3. 4.]
694 Objective function values and some other indicators:
695 Obj0 = 3.00          Obj1 = 5.00          Obj0 + Obj1 = 8.00
696 Total movement of crane: 0.00
697 Total waiting time in berth position: 5.00
698 Total index of q during berthing: 331.00
699 Specific arrangement for each vessel:
700
    V_id: 0           li: 8.0           xi: 24.0           bow of i: 20.0           tail of i: 28.0           gama_i0: 1.0           gama_i1: 2
    .0             gama_i1 + 1: 3.0           gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 60.0           work
701 load_i: 60.0           work load gap_i: 0
    V_id: 1           li: 7.0           xi: 11.5           bow of i: 8.0           tail of i: 15.0           gama_i0: 0.0           gama_i1: 0
    .0             gama_i1 + 1: 1.0           gama_i1 - gama_i0: 0.0           duration_time_i: 1.0           demand_i: 60.0           work
702 load_i: 60.0           work load gap_i: 0
    V_id: 2           li: 9.0           xi: 13.5           bow of i: 9.0           tail of i: 18.0           gama_i0: 1.0           gama_i1: 1
    .0             gama_i1 + 1: 2.0           gama_i1 - gama_i0: 0.0           duration_time_i: 1.0           demand_i: 80.0           work
703 load_i: 80.0           work load gap_i: 0
    V_id: 3           li: 9.0           xi: 4.5           bow of i: 0.0           tail of i: 9.0           gama_i0: 1.0           gama_i1: 3.0
    .0             gama_i1 + 1: 4.0           gama_i1 - gama_i0: 2.0           duration_time_i: 3.0           demand_i: 140.0           work load_i:
704 140.0           work load gap_i: 0
    V_id: 4           li: 5.0           xi: 17.5           bow of i: 15.0           tail of i: 20.0           gama_i0: 0.0           gama_i1: 0
    .0             gama_i1 + 1: 1.0           gama_i1 - gama_i0: 0.0           duration_time_i: 1.0           demand_i: 80.0           work
705 load_i: 80.0           work load gap_i: 0
    V_id: 5           li: 9.0           xi: 24.5           bow of i: 20.0           tail of i: 29.0           gama_i0: 0.0           gama_i1: 0
    .0             gama_i1 + 1: 1.0           gama_i1 - gama_i0: 0.0           duration_time_i: 1.0           demand_i: 60.0           work
706 load_i: 60.0           work load gap_i: 0
    V_id: 6           li: 3.0           xi: 10.5           bow of i: 9.0           tail of i: 12.0           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
707 load_i: 120.0           work load gap_i: 0
    V_id: 7           li: 8.0           xi: 4.0           bow of i: 0.0           tail of i: 8.0           gama_i0: 0.0           gama_i1: 0
    .0             gama_i1 + 1: 1.0           gama_i1 - gama_i0: 0.0           duration_time_i: 1.0           demand_i: 80.0           work load_i:
708 80.0           work load gap_i: 0
709 Algorithm finished and the total CPU time: 232 s
710 End
711

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