

unknown

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80 cord_individual_obj[indivial_i,:] = [16. 5. 47. 52.]
81 cord_individual_obj[indivial_i,:] = [17. 5. 67. 72.]
82 cord_individual_obj[indivial_i,:] = [18. 4. 25. 29.]
83 cord_individual_obj[indivial_i,:] = [19. 4. 49. 53.]
84 cord_individual_obj[indivial_i,:] = [20. 4. 26. 30.]
85 cord_individual_obj[indivial_i,:] = [21. 6. 52. 58.]
86 cord_individual_obj[indivial_i,:] = [22. 3. 30. 33.]
87 cord_individual_obj[indivial_i,:] = [23. 5. 52. 57.]
88 cord_individual_obj[indivial_i,:] = [24. 4. 12. 16.]
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. 6. 37. 43.]
96 cord_individual_obj[indivial_i,:] = [ 1. 5. 43. 48.]
97 cord_individual_obj[indivial_i,:] = [ 2. 4. 30. 34.]
98 cord_individual_obj[indivial_i,:] = [ 3. 6. 23. 29.]
99 cord_individual_obj[indivial_i,:] = [ 4. 6. 16. 22.]
100 cord_individual_obj[indivial_i,:] = [ 5. 5. 10. 15.]
101 cord_individual_obj[indivial_i,:] = [ 6. 4. 48. 52.]
102 cord_individual_obj[indivial_i,:] = [ 7. 5. 70. 75.]
103 cord_individual_obj[indivial_i,:] = [ 8. 5. 23. 28.]
104 cord_individual_obj[indivial_i,:] = [ 9. 4. 51. 55.]
105 cord_individual_obj[indivial_i,:] = [10. 4. 51. 55.]
106 cord_individual_obj[indivial_i,:] = [11. 5. 30. 35.]
107 cord_individual_obj[indivial_i,:] = [12. 6. 26. 32.]
108 cord_individual_obj[indivial_i,:] = [13. 4. 57. 61.]
109 cord_individual_obj[indivial_i,:] = [14. 4. 36. 40.]
110 cord_individual_obj[indivial_i,:] = [15. 5. 13. 18.]
111 cord_individual_obj[indivial_i,:] = [16. 5. 12. 17.]
112 cord_individual_obj[indivial_i,:] = [17. 3. 97. 100.]
113 cord_individual_obj[indivial_i,:] = [18. 6. 37. 43.]
114 cord_individual_obj[indivial_i,:] = [19. 5. 47. 52.]
115 cord_individual_obj[indivial_i,:] = [20. 5. 80. 85.]
116 cord_individual_obj[indivial_i,:] = [21. 3. 14. 17.]
117 cord_individual_obj[indivial_i,:] = [22. 3. 32. 35.]
118 cord_individual_obj[indivial_i,:] = [23. 4. 25. 29.]
119 cord_individual_obj[indivial_i,:] = [24. 4. 18. 22.]
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. 3. 29. 32.]
127 cord_individual_obj[indivial_i,:] = [ 1. 4. 57. 61.]
128 cord_individual_obj[indivial_i,:] = [ 2. 4. 42. 46.]
129 cord_individual_obj[indivial_i,:] = [ 3. 5. 37. 42.]
130 cord_individual_obj[indivial_i,:] = [ 4. 5. 43. 48.]
131 cord_individual_obj[indivial_i,:] = [ 5. 5. 9. 14.]
132 cord_individual_obj[indivial_i,:] = [ 6. 4. 67. 71.]
133 cord_individual_obj[indivial_i,:] = [ 7. 5. 59. 64.]
134 cord_individual_obj[indivial_i,:] = [ 8. 4. 50. 54.]
135 cord_individual_obj[indivial_i,:] = [ 9. 5. 33. 38.]
136 cord_individual_obj[indivial_i,:] = [10. 4. 10. 14.]
137 cord_individual_obj[indivial_i,:] = [11. 3. 77. 80.]
138 cord_individual_obj[indivial_i,:] = [12. 6. 13. 19.]
139 cord_individual_obj[indivial_i,:] = [13. 5. 131. 136.]
140 cord_individual_obj[indivial_i,:] = [14. 3. 30. 33.]
141 cord_individual_obj[indivial_i,:] = [15. 6. 52. 58.]
142 cord_individual_obj[indivial_i,:] = [16. 4. 29. 33.]
143 cord_individual_obj[indivial_i,:] = [17. 5. 10. 15.]
144 cord_individual_obj[indivial_i,:] = [18. 6. 39. 45.]
145 cord_individual_obj[indivial_i,:] = [19. 6. 12. 18.]
146 cord_individual_obj[indivial_i,:] = [20. 4. 57. 61.]
147 cord_individual_obj[indivial_i,:] = [21. 5. 65. 70.]
148 cord_individual_obj[indivial_i,:] = [22. 4. 51. 55.]
149 cord_individual_obj[indivial_i,:] = [23. 4. 40. 44.]
150 cord_individual_obj[indivial_i,:] = [24. 4. 12. 16.]
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. 5. 49. 54.]
158 cord_individual_obj[indivial_i,:] = [ 1. 6. 23. 29.]
159 cord_individual_obj[indivial_i,:] = [ 2. 5. 21. 26.]
160 cord_individual_obj[indivial_i,:] = [ 3. 5. 47. 52.]
161 cord_individual_obj[indivial_i,:] = [ 4. 5. 14. 19.]
162 cord_individual_obj[indivial_i,:] = [ 5. 5. 16. 21.]
163 cord_individual_obj[indivial_i,:] = [ 6. 4. 70. 74.]

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164 cord_individual_obj[indivial_i,:] = [ 7. 4. 23. 27.]
165 cord_individual_obj[indivial_i,:] = [ 8. 5. 25. 30.]
166 cord_individual_obj[indivial_i,:] = [ 9. 4. 12. 16.]
167 cord_individual_obj[indivial_i,:] = [10. 5. 18. 23.]
168 cord_individual_obj[indivial_i,:] = [11. 4. 45. 49.]
169 cord_individual_obj[indivial_i,:] = [12. 4. 39. 43.]
170 cord_individual_obj[indivial_i,:] = [13. 5. 9. 14.]
171 cord_individual_obj[indivial_i,:] = [14. 5. 62. 67.]
172 cord_individual_obj[indivial_i,:] = [15. 5. 70. 75.]
173 cord_individual_obj[indivial_i,:] = [16. 4. 25. 29.]
174 cord_individual_obj[indivial_i,:] = [17. 7. 17. 24.]
175 cord_individual_obj[indivial_i,:] = [18. 7. 38. 45.]
176 cord_individual_obj[indivial_i,:] = [19. 5. 24. 29.]
177 cord_individual_obj[indivial_i,:] = [20. 4. 24. 28.]
178 cord_individual_obj[indivial_i,:] = [21. 5. 12. 17.]
179 cord_individual_obj[indivial_i,:] = [22. 3. 36. 39.]
180 cord_individual_obj[indivial_i,:] = [23. 4. 8. 12.]
181 cord_individual_obj[indivial_i,:] = [24. 5. 11. 16.]
182
183 min(cord_individual_obj[:,3]) = 12.0
184 historl_G_best_iter[iter,3] = 12.0
185 Begin iteration:
186
187 iter = 5
188 cord_individual_obj[indivial_i,:] = [ 0. 7. 18. 25.]
189 cord_individual_obj[indivial_i,:] = [ 1. 5. 36. 41.]
190 cord_individual_obj[indivial_i,:] = [ 2. 4. 8. 12.]
191 cord_individual_obj[indivial_i,:] = [ 3. 6. 38. 44.]
192 cord_individual_obj[indivial_i,:] = [ 4. 5. 14. 19.]
193 cord_individual_obj[indivial_i,:] = [ 5. 5. 34. 39.]
194 cord_individual_obj[indivial_i,:] = [ 6. 4. 33. 37.]
195 cord_individual_obj[indivial_i,:] = [ 7. 5. 33. 38.]
196 cord_individual_obj[indivial_i,:] = [ 8. 5. 14. 19.]
197 cord_individual_obj[indivial_i,:] = [ 9. 4. 9. 13.]
198 cord_individual_obj[indivial_i,:] = [10. 4. 10. 14.]
199 cord_individual_obj[indivial_i,:] = [11. 4. 17. 21.]
200 cord_individual_obj[indivial_i,:] = [12. 6. 27. 33.]
201 cord_individual_obj[indivial_i,:] = [13. 5. 52. 57.]
202 cord_individual_obj[indivial_i,:] = [14. 3. 9. 12.]
203 cord_individual_obj[indivial_i,:] = [15. 4. 8. 12.]
204 cord_individual_obj[indivial_i,:] = [16. 6. 24. 30.]
205 cord_individual_obj[indivial_i,:] = [17. 5. 16. 21.]
206 cord_individual_obj[indivial_i,:] = [18. 5. 54. 59.]
207 cord_individual_obj[indivial_i,:] = [19. 3. 16. 19.]
208 cord_individual_obj[indivial_i,:] = [20. 5. 29. 34.]
209 cord_individual_obj[indivial_i,:] = [21. 5. 14. 19.]
210 cord_individual_obj[indivial_i,:] = [22. 4. 19. 23.]
211 cord_individual_obj[indivial_i,:] = [23. 5. 20. 25.]
212 cord_individual_obj[indivial_i,:] = [24. 3. 10. 13.]
213
214 min(cord_individual_obj[:,3]) = 12.0
215 historl_G_best_iter[iter,3] = 12.0
216 Begin iteration:
217
218 iter = 6
219 cord_individual_obj[indivial_i,:] = [ 0. 5. 16. 21.]
220 cord_individual_obj[indivial_i,:] = [ 1. 6. 35. 41.]
221 cord_individual_obj[indivial_i,:] = [ 2. 4. 21. 25.]
222 cord_individual_obj[indivial_i,:] = [ 3. 7. 15. 22.]
223 cord_individual_obj[indivial_i,:] = [ 4. 5. 17. 22.]
224 cord_individual_obj[indivial_i,:] = [ 5. 4. 10. 14.]
225 cord_individual_obj[indivial_i,:] = [ 6. 5. 59. 64.]
226 cord_individual_obj[indivial_i,:] = [ 7. 3. 14. 17.]
227 cord_individual_obj[indivial_i,:] = [ 8. 5. 13. 18.]
228 cord_individual_obj[indivial_i,:] = [ 9. 4. 10. 14.]
229 cord_individual_obj[indivial_i,:] = [10. 4. 12. 16.]
230 cord_individual_obj[indivial_i,:] = [11. 4. 30. 34.]
231 cord_individual_obj[indivial_i,:] = [12. 6. 28. 34.]
232 cord_individual_obj[indivial_i,:] = [13. 4. 71. 75.]
233 cord_individual_obj[indivial_i,:] = [14. 5. 25. 30.]
234 cord_individual_obj[indivial_i,:] = [15. 5. 11. 16.]
235 cord_individual_obj[indivial_i,:] = [16. 6. 24. 30.]
236 cord_individual_obj[indivial_i,:] = [17. 6. 13. 19.]
237 cord_individual_obj[indivial_i,:] = [18. 4. 8. 12.]
238 cord_individual_obj[indivial_i,:] = [19. 5. 44. 49.]
239 cord_individual_obj[indivial_i,:] = [20. 6. 37. 43.]
240 cord_individual_obj[indivial_i,:] = [21. 6. 28. 34.]
241 cord_individual_obj[indivial_i,:] = [22. 5. 60. 65.]
242 cord_individual_obj[indivial_i,:] = [23. 4. 47. 51.]
243 cord_individual_obj[indivial_i,:] = [24. 6. 12. 18.]
244
245 min(cord_individual_obj[:,3]) = 12.0
246 historl_G_best_iter[iter,3] = 12.0
247 Begin iteration:

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248
249 iter = 7
250 cord_individual_obj[indivial_i, :] = [ 0. 5. 23. 28.]
251 cord_individual_obj[indivial_i, :] = [ 1. 4. 32. 36.]
252 cord_individual_obj[indivial_i, :] = [ 2. 4. 21. 25.]
253 cord_individual_obj[indivial_i, :] = [ 3. 6. 27. 33.]
254 cord_individual_obj[indivial_i, :] = [ 4. 6. 23. 29.]
255 cord_individual_obj[indivial_i, :] = [ 5. 5. 11. 16.]
256 cord_individual_obj[indivial_i, :] = [ 6. 5. 35. 40.]
257 cord_individual_obj[indivial_i, :] = [ 7. 6. 16. 22.]
258 cord_individual_obj[indivial_i, :] = [ 8. 4. 10. 14.]
259 cord_individual_obj[indivial_i, :] = [ 9. 5. 15. 20.]
260 cord_individual_obj[indivial_i, :] = [10. 5. 52. 57.]
261 cord_individual_obj[indivial_i, :] = [11. 4. 10. 14.]
262 cord_individual_obj[indivial_i, :] = [12. 5. 28. 33.]
263 cord_individual_obj[indivial_i, :] = [13. 4. 8. 12.]
264 cord_individual_obj[indivial_i, :] = [14. 5. 11. 16.]
265 cord_individual_obj[indivial_i, :] = [15. 5. 11. 16.]
266 cord_individual_obj[indivial_i, :] = [16. 5. 16. 21.]
267 cord_individual_obj[indivial_i, :] = [17. 5. 10. 15.]
268 cord_individual_obj[indivial_i, :] = [18. 5. 18. 23.]
269 cord_individual_obj[indivial_i, :] = [19. 5. 11. 16.]
270 cord_individual_obj[indivial_i, :] = [20. 5. 13. 18.]
271 cord_individual_obj[indivial_i, :] = [21. 6. 14. 20.]
272 cord_individual_obj[indivial_i, :] = [22. 5. 14. 19.]
273 cord_individual_obj[indivial_i, :] = [23. 5. 9. 14.]
274 cord_individual_obj[indivial_i, :] = [24. 4. 10. 14.]
275

276 min(cord_individual_obj[:, 3]) = 12.0
277 historl_G_best_iter[iter, 3] = 12.0
278 Begin iteration:
279
280 iter = 8
281 cord_individual_obj[indivial_i, :] = [ 0. 5. 13. 18.]
282 cord_individual_obj[indivial_i, :] = [ 1. 5. 12. 17.]
283 cord_individual_obj[indivial_i, :] = [ 2. 4. 9. 13.]
284 cord_individual_obj[indivial_i, :] = [ 3. 5. 23. 28.]
285 cord_individual_obj[indivial_i, :] = [ 4. 6. 54. 60.]
286 cord_individual_obj[indivial_i, :] = [ 5. 4. 11. 15.]
287 cord_individual_obj[indivial_i, :] = [ 6. 4. 11. 15.]
288 cord_individual_obj[indivial_i, :] = [ 7. 4. 58. 62.]
289 cord_individual_obj[indivial_i, :] = [ 8. 6. 16. 22.]
290 cord_individual_obj[indivial_i, :] = [ 9. 4. 21. 25.]
291 cord_individual_obj[indivial_i, :] = [10. 4. 8. 12.]
292 cord_individual_obj[indivial_i, :] = [11. 3. 31. 34.]
293 cord_individual_obj[indivial_i, :] = [12. 4. 34. 38.]
294 cord_individual_obj[indivial_i, :] = [13. 4. 11. 15.]
295 cord_individual_obj[indivial_i, :] = [14. 4. 31. 35.]
296 cord_individual_obj[indivial_i, :] = [15. 4. 60. 64.]
297 cord_individual_obj[indivial_i, :] = [16. 4. 25. 29.]
298 cord_individual_obj[indivial_i, :] = [17. 4. 9. 13.]
299 cord_individual_obj[indivial_i, :] = [18. 5. 17. 22.]
300 cord_individual_obj[indivial_i, :] = [19. 5. 16. 21.]
301 cord_individual_obj[indivial_i, :] = [20. 3. 33. 36.]
302 cord_individual_obj[indivial_i, :] = [21. 5. 26. 31.]
303 cord_individual_obj[indivial_i, :] = [22. 4. 33. 37.]
304 cord_individual_obj[indivial_i, :] = [23. 5. 34. 39.]
305 cord_individual_obj[indivial_i, :] = [24. 4. 35. 39.]
306

307 min(cord_individual_obj[:, 3]) = 12.0
308 historl_G_best_iter[iter, 3] = 12.0
309 Begin iteration:
310
311 iter = 9
312 cord_individual_obj[indivial_i, :] = [ 0. 6. 36. 42.]
313 cord_individual_obj[indivial_i, :] = [ 1. 4. 32. 36.]
314 cord_individual_obj[indivial_i, :] = [ 2. 4. 33. 37.]
315 cord_individual_obj[indivial_i, :] = [ 3. 5. 12. 17.]
316 cord_individual_obj[indivial_i, :] = [ 4. 6. 23. 29.]
317 cord_individual_obj[indivial_i, :] = [ 5. 5. 23. 28.]
318 cord_individual_obj[indivial_i, :] = [ 6. 5. 24. 29.]
319 cord_individual_obj[indivial_i, :] = [ 7. 5. 16. 21.]
320 cord_individual_obj[indivial_i, :] = [ 8. 4. 10. 14.]
321 cord_individual_obj[indivial_i, :] = [ 9. 5. 11. 16.]
322 cord_individual_obj[indivial_i, :] = [10. 5. 36. 41.]
323 cord_individual_obj[indivial_i, :] = [11. 4. 9. 13.]
324 cord_individual_obj[indivial_i, :] = [12. 3. 33. 36.]
325 cord_individual_obj[indivial_i, :] = [13. 4. 21. 25.]
326 cord_individual_obj[indivial_i, :] = [14. 6. 11. 17.]
327 cord_individual_obj[indivial_i, :] = [15. 4. 8. 12.]
328 cord_individual_obj[indivial_i, :] = [16. 3. 40. 43.]
329 cord_individual_obj[indivial_i, :] = [17. 5. 10. 15.]
330 cord_individual_obj[indivial_i, :] = [18. 5. 11. 16.]
331 cord_individual_obj[indivial_i, :] = [19. 4. 8. 12.]

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332 cord_individual_obj[indivial_i, :] = [20. 5. 13. 18.]
333 cord_individual_obj[indivial_i, :] = [21. 6. 14. 20.]
334 cord_individual_obj[indivial_i, :] = [22. 5. 11. 16.]
335 cord_individual_obj[indivial_i, :] = [23. 6. 15. 21.]
336 cord_individual_obj[indivial_i, :] = [24. 4. 10. 14.]
337
338 min(cord_individual_obj[:, 3]) = 12.0
339 histol_G_best_iter[iter, 3] = 12.0
340 Begin iteration:
341
342 iter = 10
343 cord_individual_obj[indivial_i, :] = [ 0. 4. 34. 38.]
344 cord_individual_obj[indivial_i, :] = [ 1. 5. 9. 14.]
345 cord_individual_obj[indivial_i, :] = [ 2. 4. 7. 11.]
346 cord_individual_obj[indivial_i, :] = [ 3. 8. 16. 24.]
347 cord_individual_obj[indivial_i, :] = [ 4. 6. 11. 17.]
348 cord_individual_obj[indivial_i, :] = [ 5. 4. 11. 15.]
349 cord_individual_obj[indivial_i, :] = [ 6. 6. 14. 20.]
350 cord_individual_obj[indivial_i, :] = [ 7. 4. 18. 22.]
351 cord_individual_obj[indivial_i, :] = [ 8. 5. 29. 34.]
352 cord_individual_obj[indivial_i, :] = [ 9. 4. 34. 38.]
353 cord_individual_obj[indivial_i, :] = [10. 5. 36. 41.]
354 cord_individual_obj[indivial_i, :] = [11. 4. 9. 13.]
355 cord_individual_obj[indivial_i, :] = [12. 6. 25. 31.]
356 cord_individual_obj[indivial_i, :] = [13. 4. 11. 15.]
357 cord_individual_obj[indivial_i, :] = [14. 6. 24. 30.]
358 cord_individual_obj[indivial_i, :] = [15. 4. 10. 14.]
359 cord_individual_obj[indivial_i, :] = [16. 4. 8. 12.]
360 cord_individual_obj[indivial_i, :] = [17. 5. 10. 15.]
361 cord_individual_obj[indivial_i, :] = [18. 5. 24. 29.]
362 cord_individual_obj[indivial_i, :] = [19. 8. 17. 25.]
363 cord_individual_obj[indivial_i, :] = [20. 5. 12. 17.]
364 cord_individual_obj[indivial_i, :] = [21. 5. 15. 20.]
365 cord_individual_obj[indivial_i, :] = [22. 4. 21. 25.]
366 cord_individual_obj[indivial_i, :] = [23. 5. 37. 42.]
367 cord_individual_obj[indivial_i, :] = [24. 4. 22. 26.]
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. 34. 38.]
375 cord_individual_obj[indivial_i, :] = [ 1. 5. 9. 14.]
376 cord_individual_obj[indivial_i, :] = [ 2. 4. 9. 13.]
377 cord_individual_obj[indivial_i, :] = [ 3. 6. 12. 18.]
378 cord_individual_obj[indivial_i, :] = [ 4. 4. 34. 38.]
379 cord_individual_obj[indivial_i, :] = [ 5. 3. 35. 38.]
380 cord_individual_obj[indivial_i, :] = [ 6. 5. 12. 17.]
381 cord_individual_obj[indivial_i, :] = [ 7. 4. 16. 20.]
382 cord_individual_obj[indivial_i, :] = [ 8. 5. 11. 16.]
383 cord_individual_obj[indivial_i, :] = [ 9. 4. 34. 38.]
384 cord_individual_obj[indivial_i, :] = [10. 5. 36. 41.]
385 cord_individual_obj[indivial_i, :] = [11. 4. 9. 13.]
386 cord_individual_obj[indivial_i, :] = [12. 4. 27. 31.]
387 cord_individual_obj[indivial_i, :] = [13. 5. 42. 47.]
388 cord_individual_obj[indivial_i, :] = [14. 5. 11. 16.]
389 cord_individual_obj[indivial_i, :] = [15. 4. 8. 12.]
390 cord_individual_obj[indivial_i, :] = [16. 5. 23. 28.]
391 cord_individual_obj[indivial_i, :] = [17. 4. 31. 35.]
392 cord_individual_obj[indivial_i, :] = [18. 6. 24. 30.]
393 cord_individual_obj[indivial_i, :] = [19. 6. 24. 30.]
394 cord_individual_obj[indivial_i, :] = [20. 5. 11. 16.]
395 cord_individual_obj[indivial_i, :] = [21. 5. 18. 23.]
396 cord_individual_obj[indivial_i, :] = [22. 3. 23. 26.]
397 cord_individual_obj[indivial_i, :] = [23. 4. 7. 11.]
398 cord_individual_obj[indivial_i, :] = [24. 4. 35. 39.]
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. 35. 39.]
406 cord_individual_obj[indivial_i, :] = [ 1. 6. 15. 21.]
407 cord_individual_obj[indivial_i, :] = [ 2. 4. 9. 13.]
408 cord_individual_obj[indivial_i, :] = [ 3. 5. 13. 18.]
409 cord_individual_obj[indivial_i, :] = [ 4. 6. 12. 18.]
410 cord_individual_obj[indivial_i, :] = [ 5. 3. 8. 11.]
411 cord_individual_obj[indivial_i, :] = [ 6. 4. 32. 36.]
412 cord_individual_obj[indivial_i, :] = [ 7. 6. 17. 23.]
413 cord_individual_obj[indivial_i, :] = [ 8. 5. 11. 16.]
414 cord_individual_obj[indivial_i, :] = [ 9. 5. 23. 28.]
415 cord_individual_obj[indivial_i, :] = [10. 5. 36. 41.]

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416 cord_individual_obj[indivial_i,:] = [11. 4. 22. 26.]
417 cord_individual_obj[indivial_i,:] = [12. 5. 25. 30.]
418 cord_individual_obj[indivial_i,:] = [13. 4. 7. 11.]
419 cord_individual_obj[indivial_i,:] = [14. 3. 22. 25.]
420 cord_individual_obj[indivial_i,:] = [15. 5. 40. 45.]
421 cord_individual_obj[indivial_i,:] = [16. 4. 34. 38.]
422 cord_individual_obj[indivial_i,:] = [17. 4. 31. 35.]
423 cord_individual_obj[indivial_i,:] = [18. 5. 14. 19.]
424 cord_individual_obj[indivial_i,:] = [19. 8. 17. 25.]
425 cord_individual_obj[indivial_i,:] = [20. 4. 10. 14.]
426 cord_individual_obj[indivial_i,:] = [21. 6. 21. 27.]
427 cord_individual_obj[indivial_i,:] = [22. 5. 26. 31.]
428 cord_individual_obj[indivial_i,:] = [23. 4. 36. 40.]
429 cord_individual_obj[indivial_i,:] = [24. 4. 35. 39.]
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. 5. 15. 20.]
437 cord_individual_obj[indivial_i,:] = [ 1. 6. 17. 23.]
438 cord_individual_obj[indivial_i,:] = [ 2. 4. 49. 53.]
439 cord_individual_obj[indivial_i,:] = [ 3. 6. 16. 22.]
440 cord_individual_obj[indivial_i,:] = [ 4. 5. 17. 22.]
441 cord_individual_obj[indivial_i,:] = [ 5. 4. 35. 39.]
442 cord_individual_obj[indivial_i,:] = [ 6. 4. 23. 27.]
443 cord_individual_obj[indivial_i,:] = [ 7. 5. 16. 21.]
444 cord_individual_obj[indivial_i,:] = [ 8. 5. 12. 17.]
445 cord_individual_obj[indivial_i,:] = [ 9. 4. 78. 82.]
446 cord_individual_obj[indivial_i,:] = [10. 5. 14. 19.]
447 cord_individual_obj[indivial_i,:] = [11. 5. 28. 33.]
448 cord_individual_obj[indivial_i,:] = [12. 6. 15. 21.]
449 cord_individual_obj[indivial_i,:] = [13. 4. 23. 27.]
450 cord_individual_obj[indivial_i,:] = [14. 3. 21. 24.]
451 cord_individual_obj[indivial_i,:] = [15. 3. 8. 11.]
452 cord_individual_obj[indivial_i,:] = [16. 4. 8. 12.]
453 cord_individual_obj[indivial_i,:] = [17. 5. 33. 38.]
454 cord_individual_obj[indivial_i,:] = [18. 5. 11. 16.]
455 cord_individual_obj[indivial_i,:] = [19. 7. 27. 34.]
456 cord_individual_obj[indivial_i,:] = [20. 4. 11. 15.]
457 cord_individual_obj[indivial_i,:] = [21. 5. 18. 23.]
458 cord_individual_obj[indivial_i,:] = [22. 5. 54. 59.]
459 cord_individual_obj[indivial_i,:] = [23. 4. 8. 12.]
460 cord_individual_obj[indivial_i,:] = [24. 4. 34. 38.]
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. 5. 71. 76.]
468 cord_individual_obj[indivial_i,:] = [ 1. 5. 73. 78.]
469 cord_individual_obj[indivial_i,:] = [ 2. 4. 9. 13.]
470 cord_individual_obj[indivial_i,:] = [ 3. 4. 55. 59.]
471 cord_individual_obj[indivial_i,:] = [ 4. 4. 19. 23.]
472 cord_individual_obj[indivial_i,:] = [ 5. 4. 35. 39.]
473 cord_individual_obj[indivial_i,:] = [ 6. 5. 14. 19.]
474 cord_individual_obj[indivial_i,:] = [ 7. 3. 9. 12.]
475 cord_individual_obj[indivial_i,:] = [ 8. 4. 21. 25.]
476 cord_individual_obj[indivial_i,:] = [ 9. 3. 8. 11.]
477 cord_individual_obj[indivial_i,:] = [10. 4. 12. 16.]
478 cord_individual_obj[indivial_i,:] = [11. 4. 61. 65.]
479 cord_individual_obj[indivial_i,:] = [12. 4. 60. 64.]
480 cord_individual_obj[indivial_i,:] = [13. 4. 34. 38.]
481 cord_individual_obj[indivial_i,:] = [14. 4. 19. 23.]
482 cord_individual_obj[indivial_i,:] = [15. 4. 34. 38.]
483 cord_individual_obj[indivial_i,:] = [16. 3. 21. 24.]
484 cord_individual_obj[indivial_i,:] = [17. 4. 74. 78.]
485 cord_individual_obj[indivial_i,:] = [18. 5. 13. 18.]
486 cord_individual_obj[indivial_i,:] = [19. 4. 35. 39.]
487 cord_individual_obj[indivial_i,:] = [20. 4. 50. 54.]
488 cord_individual_obj[indivial_i,:] = [21. 4. 70. 74.]
489 cord_individual_obj[indivial_i,:] = [22. 5. 12. 17.]
490 cord_individual_obj[indivial_i,:] = [23. 5. 21. 26.]
491 cord_individual_obj[indivial_i,:] = [24. 4. 23. 27.]
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. 70. 74.]
499 cord_individual_obj[indivial_i,:] = [ 1. 3. 8. 11.]

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500 cord_individual_obj[indivial_i, :] = [ 2. 4. 11. 15.]
501 cord_individual_obj[indivial_i, :] = [ 3. 7. 16. 23.]
502 cord_individual_obj[indivial_i, :] = [ 4. 5. 24. 29.]
503 cord_individual_obj[indivial_i, :] = [ 5. 3. 7. 10.]
504 cord_individual_obj[indivial_i, :] = [ 6. 4. 12. 16.]
505 cord_individual_obj[indivial_i, :] = [ 7. 4. 65. 69.]
506 cord_individual_obj[indivial_i, :] = [ 8. 4. 11. 15.]
507 cord_individual_obj[indivial_i, :] = [ 9. 4. 11. 15.]
508 cord_individual_obj[indivial_i, :] = [10. 5. 14. 19.]
509 cord_individual_obj[indivial_i, :] = [11. 5. 18. 23.]
510 cord_individual_obj[indivial_i, :] = [12. 4. 14. 18.]
511 cord_individual_obj[indivial_i, :] = [13. 4. 24. 28.]
512 cord_individual_obj[indivial_i, :] = [14. 4. 20. 24.]
513 cord_individual_obj[indivial_i, :] = [15. 5. 35. 40.]
514 cord_individual_obj[indivial_i, :] = [16. 5. 36. 41.]
515 cord_individual_obj[indivial_i, :] = [17. 4. 68. 72.]
516 cord_individual_obj[indivial_i, :] = [18. 3. 56. 59.]
517 cord_individual_obj[indivial_i, :] = [19. 5. 11. 16.]
518 cord_individual_obj[indivial_i, :] = [20. 4. 35. 39.]
519 cord_individual_obj[indivial_i, :] = [21. 5. 24. 29.]
520 cord_individual_obj[indivial_i, :] = [22. 4. 72. 76.]
521 cord_individual_obj[indivial_i, :] = [23. 4. 21. 25.]
522 cord_individual_obj[indivial_i, :] = [24. 4. 10. 14.]
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. 17. 21.]
530 cord_individual_obj[indivial_i, :] = [ 1. 5. 21. 26.]
531 cord_individual_obj[indivial_i, :] = [ 2. 4. 11. 15.]
532 cord_individual_obj[indivial_i, :] = [ 3. 5. 12. 17.]
533 cord_individual_obj[indivial_i, :] = [ 4. 4. 55. 59.]
534 cord_individual_obj[indivial_i, :] = [ 5. 4. 39. 43.]
535 cord_individual_obj[indivial_i, :] = [ 6. 6. 28. 34.]
536 cord_individual_obj[indivial_i, :] = [ 7. 4. 9. 13.]
537 cord_individual_obj[indivial_i, :] = [ 8. 4. 21. 25.]
538 cord_individual_obj[indivial_i, :] = [ 9. 4. 11. 15.]
539 cord_individual_obj[indivial_i, :] = [10. 4. 24. 28.]
540 cord_individual_obj[indivial_i, :] = [11. 3. 25. 28.]
541 cord_individual_obj[indivial_i, :] = [12. 4. 74. 78.]
542 cord_individual_obj[indivial_i, :] = [13. 6. 25. 31.]
543 cord_individual_obj[indivial_i, :] = [14. 4. 19. 23.]
544 cord_individual_obj[indivial_i, :] = [15. 4. 70. 74.]
545 cord_individual_obj[indivial_i, :] = [16. 4. 35. 39.]
546 cord_individual_obj[indivial_i, :] = [17. 4. 68. 72.]
547 cord_individual_obj[indivial_i, :] = [18. 5. 40. 45.]
548 cord_individual_obj[indivial_i, :] = [19. 5. 24. 29.]
549 cord_individual_obj[indivial_i, :] = [20. 4. 35. 39.]
550 cord_individual_obj[indivial_i, :] = [21. 6. 36. 42.]
551 cord_individual_obj[indivial_i, :] = [22. 3. 7. 10.]
552 cord_individual_obj[indivial_i, :] = [23. 5. 23. 28.]
553 cord_individual_obj[indivial_i, :] = [24. 4. 23. 27.]
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. 4. 70. 74.]
561 cord_individual_obj[indivial_i, :] = [ 1. 5. 57. 62.]
562 cord_individual_obj[indivial_i, :] = [ 2. 4. 7. 11.]
563 cord_individual_obj[indivial_i, :] = [ 3. 7. 16. 23.]
564 cord_individual_obj[indivial_i, :] = [ 4. 5. 23. 28.]
565 cord_individual_obj[indivial_i, :] = [ 5. 4. 70. 74.]
566 cord_individual_obj[indivial_i, :] = [ 6. 3. 35. 38.]
567 cord_individual_obj[indivial_i, :] = [ 7. 5. 10. 15.]
568 cord_individual_obj[indivial_i, :] = [ 8. 4. 11. 15.]
569 cord_individual_obj[indivial_i, :] = [ 9. 4. 9. 13.]
570 cord_individual_obj[indivial_i, :] = [10. 4. 10. 14.]
571 cord_individual_obj[indivial_i, :] = [11. 3. 57. 60.]
572 cord_individual_obj[indivial_i, :] = [12. 3. 7. 10.]
573 cord_individual_obj[indivial_i, :] = [13. 5. 17. 22.]
574 cord_individual_obj[indivial_i, :] = [14. 4. 22. 26.]
575 cord_individual_obj[indivial_i, :] = [15. 3. 70. 73.]
576 cord_individual_obj[indivial_i, :] = [16. 3. 34. 37.]
577 cord_individual_obj[indivial_i, :] = [17. 4. 37. 41.]
578 cord_individual_obj[indivial_i, :] = [18. 5. 40. 45.]
579 cord_individual_obj[indivial_i, :] = [19. 5. 36. 41.]
580 cord_individual_obj[indivial_i, :] = [20. 5. 35. 40.]
581 cord_individual_obj[indivial_i, :] = [21. 5. 50. 55.]
582 cord_individual_obj[indivial_i, :] = [22. 4. 11. 15.]
583 cord_individual_obj[indivial_i, :] = [23. 5. 11. 16.]

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unknown

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584     cord_individual_obj[indivial_i, :] = [24. 4. 35. 39.]  
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. 3. 7. 10.]  
592     cord_individual_obj[indivial_i, :] = [ 1. 5. 12. 17.]  
593     cord_individual_obj[indivial_i, :] = [ 2. 4. 9. 13.]  
594     cord_individual_obj[indivial_i, :] = [ 3. 5. 14. 19.]  
595     cord_individual_obj[indivial_i, :] = [ 4. 4. 25. 29.]  
596     cord_individual_obj[indivial_i, :] = [ 5. 4. 11. 15.]  
597     cord_individual_obj[indivial_i, :] = [ 6. 4. 12. 16.]  
598     cord_individual_obj[indivial_i, :] = [ 7. 4. 8. 12.]  
599     cord_individual_obj[indivial_i, :] = [ 8. 4. 23. 27.]  
600     cord_individual_obj[indivial_i, :] = [ 9. 4. 35. 39.]  
601     cord_individual_obj[indivial_i, :] = [10. 4. 10. 14.]  
602     cord_individual_obj[indivial_i, :] = [11. 3. 42. 45.]  
603     cord_individual_obj[indivial_i, :] = [12. 4. 22. 26.]  
604     cord_individual_obj[indivial_i, :] = [13. 4. 22. 26.]  
605     cord_individual_obj[indivial_i, :] = [14. 5. 22. 27.]  
606     cord_individual_obj[indivial_i, :] = [15. 3. 33. 36.]  
607     cord_individual_obj[indivial_i, :] = [16. 5. 11. 16.]  
608     cord_individual_obj[indivial_i, :] = [17. 5. 14. 19.]  
609     cord_individual_obj[indivial_i, :] = [18. 5. 27. 32.]  
610     cord_individual_obj[indivial_i, :] = [19. 6. 27. 33.]  
611     cord_individual_obj[indivial_i, :] = [20. 4. 33. 37.]  
612     cord_individual_obj[indivial_i, :] = [21. 5. 27. 32.]  
613     cord_individual_obj[indivial_i, :] = [22. 4. 72. 76.]  
614     cord_individual_obj[indivial_i, :] = [23. 4. 8. 12.]  
615     cord_individual_obj[indivial_i, :] = [24. 3. 57. 60.]  
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. 4. 60. 64.]  
623     cord_individual_obj[indivial_i, :] = [ 1. 5. 35. 40.]  
624     cord_individual_obj[indivial_i, :] = [ 2. 4. 9. 13.]  
625     cord_individual_obj[indivial_i, :] = [ 3. 5. 12. 17.]  
626     cord_individual_obj[indivial_i, :] = [ 4. 5. 23. 28.]  
627     cord_individual_obj[indivial_i, :] = [ 5. 3. 10. 13.]  
628     cord_individual_obj[indivial_i, :] = [ 6. 4. 12. 16.]  
629     cord_individual_obj[indivial_i, :] = [ 7. 4. 11. 15.]  
630     cord_individual_obj[indivial_i, :] = [ 8. 4. 11. 15.]  
631     cord_individual_obj[indivial_i, :] = [ 9. 4. 10. 14.]  
632     cord_individual_obj[indivial_i, :] = [10. 5. 12. 17.]  
633     cord_individual_obj[indivial_i, :] = [11. 3. 57. 60.]  
634     cord_individual_obj[indivial_i, :] = [12. 4. 34. 38.]  
635     cord_individual_obj[indivial_i, :] = [13. 5. 39. 44.]  
636     cord_individual_obj[indivial_i, :] = [14. 3. 21. 24.]  
637     cord_individual_obj[indivial_i, :] = [15. 4. 70. 74.]  
638     cord_individual_obj[indivial_i, :] = [16. 4. 10. 14.]  
639     cord_individual_obj[indivial_i, :] = [17. 4. 37. 41.]  
640     cord_individual_obj[indivial_i, :] = [18. 5. 40. 45.]  
641     cord_individual_obj[indivial_i, :] = [19. 5. 36. 41.]  
642     cord_individual_obj[indivial_i, :] = [20. 5. 35. 40.]  
643     cord_individual_obj[indivial_i, :] = [21. 5. 20. 25.]  
644     cord_individual_obj[indivial_i, :] = [22. 3. 7. 10.]  
645     cord_individual_obj[indivial_i, :] = [23. 5. 11. 16.]  
646     cord_individual_obj[indivial_i, :] = [24. 4. 22. 26.]  
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. 60. 64.]  
654     cord_individual_obj[indivial_i, :] = [ 1. 4. 10. 14.]  
655     cord_individual_obj[indivial_i, :] = [ 2. 4. 8. 12.]  
656     cord_individual_obj[indivial_i, :] = [ 3. 5. 22. 27.]  
657     cord_individual_obj[indivial_i, :] = [ 4. 4. 12. 16.]  
658     cord_individual_obj[indivial_i, :] = [ 5. 4. 70. 74.]  
659     cord_individual_obj[indivial_i, :] = [ 6. 4. 24. 28.]  
660     cord_individual_obj[indivial_i, :] = [ 7. 4. 8. 12.]  
661     cord_individual_obj[indivial_i, :] = [ 8. 4. 21. 25.]  
662     cord_individual_obj[indivial_i, :] = [ 9. 4. 70. 74.]  
663     cord_individual_obj[indivial_i, :] = [10. 4. 37. 41.]  
664     cord_individual_obj[indivial_i, :] = [11. 4. 24. 28.]  
665     cord_individual_obj[indivial_i, :] = [12. 4. 10. 14.]  
666     cord_individual_obj[indivial_i, :] = [13. 4. 15. 19.]  
667     cord_individual_obj[indivial_i, :] = [14. 4. 22. 26.]
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668 cord_individual_obj[indivial_i,:] = [15. 3. 7. 10.]
669 cord_individual_obj[indivial_i,:] = [16. 3. 34. 37.]
670 cord_individual_obj[indivial_i,:] = [17. 4. 12. 16.]
671 cord_individual_obj[indivial_i,:] = [18. 6. 39. 45.]
672 cord_individual_obj[indivial_i,:] = [19. 5. 30. 35.]
673 cord_individual_obj[indivial_i,:] = [20. 4. 10. 14.]
674 cord_individual_obj[indivial_i,:] = [21. 4. 24. 28.]
675 cord_individual_obj[indivial_i,:] = [22. 4. 72. 76.]
676 cord_individual_obj[indivial_i,:] = [23. 4. 55. 59.]
677 cord_individual_obj[indivial_i,:] = [24. 3. 33. 36.]
678
679 min(cord_individual_obj[:, 3]) = 10.0
680 historl_G_best_iter[iter, 3] = 10.0
681 Iteration calculate over
682
683
684
685
686 All item are in Bin and:
687 Bin area = 1080
688 Real_area = 92.0
689 Proportion_of_area = 0.08518518518518518
690 BEST_CHROM =
691     berth: [3. 8. 11.5 14.5 20.5 20. 20.5 4. 3. ]
692     time: [0. 0. 0. 0. 1. 2. 3. 1.]
693     num_QC: [5. 3. 2. 2. 7. 3. 2. 7. 2.]
694 Objective function values and some other indicators:
695 Obj0 = 3.00          Obj1 = 7.00          Obj0 + Obj1 = 10.00
696 Total movement of crane: 0.00
697 Total waiting time in berth position: 7.00
698 Total index of q during berthing: 437.00
699 Specific arrangement for each vessel:
700
    V_id: 0           li: 6.0           xi: 3.0           bow of i: 0.0           tail of i: 6.0           gama_i0: 0.0           gama_i1: 0.0
    .               gama_i1 + 1: 1.0       gama_i1 - gama_i0: 0.0       duration_time_i: 1.0
100.0           work load gap_i: 0
701
    V_id: 1           li: 4.0           xi: 8.0           bow of i: 6.0           tail of i: 10.0          gama_i0: 0.0           gama_i1: 2.0
    .               gama_i1 + 1: 3.0       gama_i1 - gama_i0: 2.0       duration_time_i: 3.0
140.0           work load gap_i: 0
702
    V_id: 2           li: 3.0           xi: 11.5          bow of i: 10.0          tail of i: 13.0          gama_i0: 0.0           gama_i1: 2
    .               gama_i1 + 1: 3.0       gama_i1 - gama_i0: 2.0       duration_time_i: 3.0
load_i: 120.0   work load gap_i: 0
703
    V_id: 3           li: 3.0           xi: 14.5          bow of i: 13.0          tail of i: 16.0          gama_i0: 0.0           gama_i1: 2
    .               gama_i1 + 1: 3.0       gama_i1 - gama_i0: 2.0       duration_time_i: 3.0
load_i: 100.0   work load gap_i: 0
704
    V_id: 4           li: 9.0           xi: 20.5          bow of i: 16.0          tail of i: 25.0          gama_i0: 0.0           gama_i1: 0
    .               gama_i1 + 1: 1.0       gama_i1 - gama_i0: 0.0       duration_time_i: 1.0
load_i: 140.0   work load gap_i: 0
705
    V_id: 5           li: 8.0           xi: 20.0          bow of i: 16.0          tail of i: 24.0          gama_i0: 1.0           gama_i1: 1
    .               gama_i1 + 1: 2.0       gama_i1 - gama_i0: 0.0       duration_time_i: 1.0
load_i: 60.0     work load gap_i: 0
706
    V_id: 6           li: 9.0           xi: 20.5          bow of i: 16.0          tail of i: 25.0          gama_i0: 2.0           gama_i1: 3
    .               gama_i1 + 1: 4.0       gama_i1 - gama_i0: 1.0       duration_time_i: 2.0
load_i: 60.0     work load gap_i: 0
707
    V_id: 7           li: 8.0           xi: 4.0           bow of i: 0.0           tail of i: 8.0           gama_i0: 3.0           gama_i1: 3
    .               gama_i1 + 1: 4.0       gama_i1 - gama_i0: 0.0       duration_time_i: 1.0
120.0           work load gap_i: 0
708
    V_id: 8           li: 6.0           xi: 3.0           bow of i: 0.0           tail of i: 6.0           gama_i0: 1.0           gama_i1: 2
    .               gama_i1 + 1: 3.0       gama_i1 - gama_i0: 1.0       duration_time_i: 2.0
60.0           work load gap_i: 0
709
710 Algorithm finished and the total CPU time: 251 s
711 End
712

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