

unknown

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80 cord_individual_obj[indivial_i,:] = [16. 4. 46. 50.]
81 cord_individual_obj[indivial_i,:] = [17. 6. 130. 136.]
82 cord_individual_obj[indivial_i,:] = [18. 5. 146. 151.]
83 cord_individual_obj[indivial_i,:] = [19. 5. 97. 102.]
84 cord_individual_obj[indivial_i,:] = [20. 5. 65. 70.]
85 cord_individual_obj[indivial_i,:] = [21. 5. 57. 62.]
86 cord_individual_obj[indivial_i,:] = [22. 5. 93. 98.]
87 cord_individual_obj[indivial_i,:] = [23. 5. 68. 73.]
88 cord_individual_obj[indivial_i,:] = [24. 5. 23. 28.]
89
90 min(cord_individual_obj[:,3]) = 20.0
91 historl_G_best_iter[iter,3] = 20.0
92 Begin iteration:
93
94 iter = 2
95 cord_individual_obj[indivial_i,:] = [0. 6. 60. 66.]
96 cord_individual_obj[indivial_i,:] = [1. 4. 98. 102.]
97 cord_individual_obj[indivial_i,:] = [2. 6. 66. 72.]
98 cord_individual_obj[indivial_i,:] = [3. 5. 25. 30.]
99 cord_individual_obj[indivial_i,:] = [4. 6. 47. 53.]
100 cord_individual_obj[indivial_i,:] = [5. 4. 40. 44.]
101 cord_individual_obj[indivial_i,:] = [6. 5. 58. 63.]
102 cord_individual_obj[indivial_i,:] = [7. 7. 105. 112.]
103 cord_individual_obj[indivial_i,:] = [8. 5. 80. 85.]
104 cord_individual_obj[indivial_i,:] = [9. 4. 95. 99.]
105 cord_individual_obj[indivial_i,:] = [10. 6. 32. 38.]
106 cord_individual_obj[indivial_i,:] = [11. 7. 108. 115.]
107 cord_individual_obj[indivial_i,:] = [12. 6. 54. 60.]
108 cord_individual_obj[indivial_i,:] = [13. 6. 60. 66.]
109 cord_individual_obj[indivial_i,:] = [14. 6. 106. 112.]
110 cord_individual_obj[indivial_i,:] = [15. 4. 88. 92.]
111 cord_individual_obj[indivial_i,:] = [16. 4. 34. 38.]
112 cord_individual_obj[indivial_i,:] = [17. 7. 23. 30.]
113 cord_individual_obj[indivial_i,:] = [18. 5. 15. 20.]
114 cord_individual_obj[indivial_i,:] = [19. 4. 66. 70.]
115 cord_individual_obj[indivial_i,:] = [20. 4. 32. 36.]
116 cord_individual_obj[indivial_i,:] = [21. 5. 17. 22.]
117 cord_individual_obj[indivial_i,:] = [22. 5. 20. 25.]
118 cord_individual_obj[indivial_i,:] = [23. 6. 28. 34.]
119 cord_individual_obj[indivial_i,:] = [24. 7. 61. 68.]
120
121 min(cord_individual_obj[:,3]) = 20.0
122 historl_G_best_iter[iter,3] = 20.0
123 Begin iteration:
124
125 iter = 3
126 cord_individual_obj[indivial_i,:] = [0. 7. 46. 53.]
127 cord_individual_obj[indivial_i,:] = [1. 6. 20. 26.]
128 cord_individual_obj[indivial_i,:] = [2. 5. 46. 51.]
129 cord_individual_obj[indivial_i,:] = [3. 6. 53. 59.]
130 cord_individual_obj[indivial_i,:] = [4. 7. 21. 28.]
131 cord_individual_obj[indivial_i,:] = [5. 5. 93. 98.]
132 cord_individual_obj[indivial_i,:] = [6. 7. 68. 75.]
133 cord_individual_obj[indivial_i,:] = [7. 4. 66. 70.]
134 cord_individual_obj[indivial_i,:] = [8. 4. 16. 20.]
135 cord_individual_obj[indivial_i,:] = [9. 5. 69. 74.]
136 cord_individual_obj[indivial_i,:] = [10. 4. 43. 47.]
137 cord_individual_obj[indivial_i,:] = [11. 5. 15. 20.]
138 cord_individual_obj[indivial_i,:] = [12. 7. 62. 69.]
139 cord_individual_obj[indivial_i,:] = [13. 5. 29. 34.]
140 cord_individual_obj[indivial_i,:] = [14. 6. 27. 33.]
141 cord_individual_obj[indivial_i,:] = [15. 3. 64. 67.]
142 cord_individual_obj[indivial_i,:] = [16. 5. 73. 78.]
143 cord_individual_obj[indivial_i,:] = [17. 5. 77. 82.]
144 cord_individual_obj[indivial_i,:] = [18. 4. 18. 22.]
145 cord_individual_obj[indivial_i,:] = [19. 3. 78. 81.]
146 cord_individual_obj[indivial_i,:] = [20. 5. 57. 62.]
147 cord_individual_obj[indivial_i,:] = [21. 5. 71. 76.]
148 cord_individual_obj[indivial_i,:] = [22. 7. 34. 41.]
149 cord_individual_obj[indivial_i,:] = [23. 6. 21. 27.]
150 cord_individual_obj[indivial_i,:] = [24. 5. 92. 97.]
151
152 min(cord_individual_obj[:,3]) = 20.0
153 historl_G_best_iter[iter,3] = 20.0
154 Begin iteration:
155
156 iter = 4
157 cord_individual_obj[indivial_i,:] = [0. 5. 24. 29.]
158 cord_individual_obj[indivial_i,:] = [1. 5. 79. 84.]
159 cord_individual_obj[indivial_i,:] = [2. 5. 21. 26.]
160 cord_individual_obj[indivial_i,:] = [3. 6. 40. 46.]
161 cord_individual_obj[indivial_i,:] = [4. 4. 19. 23.]
162 cord_individual_obj[indivial_i,:] = [5. 4. 16. 20.]
163 cord_individual_obj[indivial_i,:] = [6. 5. 49. 54.]

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164 cord_individual_obj[indivial_i,:] = [ 7. 5. 60. 65.]
165 cord_individual_obj[indivial_i,:] = [ 8. 4. 86. 90.]
166 cord_individual_obj[indivial_i,:] = [ 9. 5. 35. 40.]
167 cord_individual_obj[indivial_i,:] = [10. 4. 95. 99.]
168 cord_individual_obj[indivial_i,:] = [11. 5. 16. 21.]
169 cord_individual_obj[indivial_i,:] = [12. 5. 32. 37.]
170 cord_individual_obj[indivial_i,:] = [13. 5. 15. 20.]
171 cord_individual_obj[indivial_i,:] = [14. 6. 27. 33.]
172 cord_individual_obj[indivial_i,:] = [15. 6. 28. 34.]
173 cord_individual_obj[indivial_i,:] = [16. 5. 42. 47.]
174 cord_individual_obj[indivial_i,:] = [17. 4. 53. 57.]
175 cord_individual_obj[indivial_i,:] = [18. 4. 69. 73.]
176 cord_individual_obj[indivial_i,:] = [19. 5. 34. 39.]
177 cord_individual_obj[indivial_i,:] = [20. 4. 16. 20.]
178 cord_individual_obj[indivial_i,:] = [21. 6. 71. 77.]
179 cord_individual_obj[indivial_i,:] = [22. 5. 82. 87.]
180 cord_individual_obj[indivial_i,:] = [23. 6. 41. 47.]
181 cord_individual_obj[indivial_i,:] = [24. 5. 21. 26.]
182
183 min(cord_individual_obj[:,3]) = 20.0
184 historl_G_best_iter[iter,3] = 20.0
185 Begin iteration:
186
187 iter = 5
188 cord_individual_obj[indivial_i,:] = [ 0. 5. 31. 36.]
189 cord_individual_obj[indivial_i,:] = [ 1. 5. 27. 32.]
190 cord_individual_obj[indivial_i,:] = [ 2. 6. 40. 46.]
191 cord_individual_obj[indivial_i,:] = [ 3. 5. 42. 47.]
192 cord_individual_obj[indivial_i,:] = [ 4. 6. 23. 29.]
193 cord_individual_obj[indivial_i,:] = [ 5. 5. 82. 87.]
194 cord_individual_obj[indivial_i,:] = [ 6. 5. 16. 21.]
195 cord_individual_obj[indivial_i,:] = [ 7. 5. 72. 77.]
196 cord_individual_obj[indivial_i,:] = [ 8. 4. 26. 30.]
197 cord_individual_obj[indivial_i,:] = [ 9. 3. 35. 38.]
198 cord_individual_obj[indivial_i,:] = [10. 4. 16. 20.]
199 cord_individual_obj[indivial_i,:] = [11. 5. 39. 44.]
200 cord_individual_obj[indivial_i,:] = [12. 5. 27. 32.]
201 cord_individual_obj[indivial_i,:] = [13. 4. 30. 34.]
202 cord_individual_obj[indivial_i,:] = [14. 5. 24. 29.]
203 cord_individual_obj[indivial_i,:] = [15. 5. 53. 58.]
204 cord_individual_obj[indivial_i,:] = [16. 4. 66. 70.]
205 cord_individual_obj[indivial_i,:] = [17. 5. 34. 39.]
206 cord_individual_obj[indivial_i,:] = [18. 4. 61. 65.]
207 cord_individual_obj[indivial_i,:] = [19. 4. 55. 59.]
208 cord_individual_obj[indivial_i,:] = [20. 5. 13. 18.]
209 cord_individual_obj[indivial_i,:] = [21. 5. 137. 142.]
210 cord_individual_obj[indivial_i,:] = [22. 5. 14. 19.]
211 cord_individual_obj[indivial_i,:] = [23. 5. 34. 39.]
212 cord_individual_obj[indivial_i,:] = [24. 7. 46. 53.]
213
214 min(cord_individual_obj[:,3]) = 18.0
215 historl_G_best_iter[iter,3] = 18.0
216 Begin iteration:
217
218 iter = 6
219 cord_individual_obj[indivial_i,:] = [ 0. 4. 141. 145.]
220 cord_individual_obj[indivial_i,:] = [ 1. 4. 30. 34.]
221 cord_individual_obj[indivial_i,:] = [ 2. 4. 65. 69.]
222 cord_individual_obj[indivial_i,:] = [ 3. 5. 85. 90.]
223 cord_individual_obj[indivial_i,:] = [ 4. 4. 156. 160.]
224 cord_individual_obj[indivial_i,:] = [ 5. 4. 44. 48.]
225 cord_individual_obj[indivial_i,:] = [ 6. 5. 109. 114.]
226 cord_individual_obj[indivial_i,:] = [ 7. 5. 51. 56.]
227 cord_individual_obj[indivial_i,:] = [ 8. 4. 45. 49.]
228 cord_individual_obj[indivial_i,:] = [ 9. 4. 31. 35.]
229 cord_individual_obj[indivial_i,:] = [10. 5. 92. 97.]
230 cord_individual_obj[indivial_i,:] = [11. 4. 159. 163.]
231 cord_individual_obj[indivial_i,:] = [12. 4. 94. 98.]
232 cord_individual_obj[indivial_i,:] = [13. 4. 75. 79.]
233 cord_individual_obj[indivial_i,:] = [14. 6. 43. 49.]
234 cord_individual_obj[indivial_i,:] = [15. 5. 22. 27.]
235 cord_individual_obj[indivial_i,:] = [16. 4. 16. 20.]
236 cord_individual_obj[indivial_i,:] = [17. 5. 34. 39.]
237 cord_individual_obj[indivial_i,:] = [18. 5. 52. 57.]
238 cord_individual_obj[indivial_i,:] = [19. 4. 32. 36.]
239 cord_individual_obj[indivial_i,:] = [20. 5. 38. 43.]
240 cord_individual_obj[indivial_i,:] = [21. 5. 13. 18.]
241 cord_individual_obj[indivial_i,:] = [22. 4. 32. 36.]
242 cord_individual_obj[indivial_i,:] = [23. 3. 14. 17.]
243 cord_individual_obj[indivial_i,:] = [24. 4. 87. 91.]
244
245 min(cord_individual_obj[:,3]) = 17.0
246 historl_G_best_iter[iter,3] = 17.0
247 Begin iteration:

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248
249 iter = 7
250 cord_individual_obj[indivial_i, :] = [ 0.  5. 63. 68.]
251 cord_individual_obj[indivial_i, :] = [ 1.  4. 61. 65.]
252 cord_individual_obj[indivial_i, :] = [ 2.  4. 43. 47.]
253 cord_individual_obj[indivial_i, :] = [ 3.  4. 28. 32.]
254 cord_individual_obj[indivial_i, :] = [ 4.  4. 12. 16.]
255 cord_individual_obj[indivial_i, :] = [ 5.  5. 25. 30.]
256 cord_individual_obj[indivial_i, :] = [ 6.  8. 99. 107.]
257 cord_individual_obj[indivial_i, :] = [ 7.  5. 39. 44.]
258 cord_individual_obj[indivial_i, :] = [ 8.  5. 15. 20.]
259 cord_individual_obj[indivial_i, :] = [ 9.  5. 123. 128.]
260 cord_individual_obj[indivial_i, :] = [10. 5. 46. 51.]
261 cord_individual_obj[indivial_i, :] = [11. 3. 14. 17.]
262 cord_individual_obj[indivial_i, :] = [12. 5. 25. 30.]
263 cord_individual_obj[indivial_i, :] = [13. 5. 38. 43.]
264 cord_individual_obj[indivial_i, :] = [14. 5. 33. 38.]
265 cord_individual_obj[indivial_i, :] = [15. 6. 46. 52.]
266 cord_individual_obj[indivial_i, :] = [16. 4. 67. 71.]
267 cord_individual_obj[indivial_i, :] = [17. 5. 79. 84.]
268 cord_individual_obj[indivial_i, :] = [18. 6. 36. 42.]
269 cord_individual_obj[indivial_i, :] = [19. 5. 55. 60.]
270 cord_individual_obj[indivial_i, :] = [20. 5. 22. 27.]
271 cord_individual_obj[indivial_i, :] = [21. 5. 24. 29.]
272 cord_individual_obj[indivial_i, :] = [22. 4. 17. 21.]
273 cord_individual_obj[indivial_i, :] = [23. 5. 67. 72.]
274 cord_individual_obj[indivial_i, :] = [24. 7. 57. 64.]
275

276 min(cord_individual_obj[:, 3]) = 16.0
277 historl_G_best_iter[iter, 3] = 16.0
278 Begin iteration:
279
280 iter = 8
281 cord_individual_obj[indivial_i, :] = [ 0.  6. 39. 45.]
282 cord_individual_obj[indivial_i, :] = [ 1.  6. 63. 69.]
283 cord_individual_obj[indivial_i, :] = [ 2.  6. 81. 87.]
284 cord_individual_obj[indivial_i, :] = [ 3.  6. 102. 108.]
285 cord_individual_obj[indivial_i, :] = [ 4.  7. 15. 22.]
286 cord_individual_obj[indivial_i, :] = [ 5.  5. 47. 52.]
287 cord_individual_obj[indivial_i, :] = [ 6.  5. 57. 62.]
288 cord_individual_obj[indivial_i, :] = [ 7.  6. 14. 20.]
289 cord_individual_obj[indivial_i, :] = [ 8.  6. 52. 58.]
290 cord_individual_obj[indivial_i, :] = [ 9.  4. 12. 16.]
291 cord_individual_obj[indivial_i, :] = [10. 3. 51. 54.]
292 cord_individual_obj[indivial_i, :] = [11. 5. 45. 50.]
293 cord_individual_obj[indivial_i, :] = [12. 6. 95. 101.]
294 cord_individual_obj[indivial_i, :] = [13. 5. 48. 53.]
295 cord_individual_obj[indivial_i, :] = [14. 5. 59. 64.]
296 cord_individual_obj[indivial_i, :] = [15. 5. 43. 48.]
297 cord_individual_obj[indivial_i, :] = [16. 6. 79. 85.]
298 cord_individual_obj[indivial_i, :] = [17. 5. 71. 76.]
299 cord_individual_obj[indivial_i, :] = [18. 5. 56. 61.]
300 cord_individual_obj[indivial_i, :] = [19. 4. 49. 53.]
301 cord_individual_obj[indivial_i, :] = [20. 5. 43. 48.]
302 cord_individual_obj[indivial_i, :] = [21. 6. 57. 63.]
303 cord_individual_obj[indivial_i, :] = [22. 5. 69. 74.]
304 cord_individual_obj[indivial_i, :] = [23. 4. 95. 99.]
305 cord_individual_obj[indivial_i, :] = [24. 4. 67. 71.]
306

307 min(cord_individual_obj[:, 3]) = 16.0
308 historl_G_best_iter[iter, 3] = 16.0
309 Begin iteration:
310
311 iter = 9
312 cord_individual_obj[indivial_i, :] = [ 0.  6. 48. 54.]
313 cord_individual_obj[indivial_i, :] = [ 1.  6. 40. 46.]
314 cord_individual_obj[indivial_i, :] = [ 2.  6. 67. 73.]
315 cord_individual_obj[indivial_i, :] = [ 3.  4. 12. 16.]
316 cord_individual_obj[indivial_i, :] = [ 4.  7. 64. 71.]
317 cord_individual_obj[indivial_i, :] = [ 5.  6. 56. 62.]
318 cord_individual_obj[indivial_i, :] = [ 6.  5. 53. 58.]
319 cord_individual_obj[indivial_i, :] = [ 7.  6. 33. 39.]
320 cord_individual_obj[indivial_i, :] = [ 8.  6. 52. 58.]
321 cord_individual_obj[indivial_i, :] = [ 9.  5. 43. 48.]
322 cord_individual_obj[indivial_i, :] = [10. 4. 35. 39.]
323 cord_individual_obj[indivial_i, :] = [11. 6. 50. 56.]
324 cord_individual_obj[indivial_i, :] = [12. 7. 27. 34.]
325 cord_individual_obj[indivial_i, :] = [13. 7. 52. 59.]
326 cord_individual_obj[indivial_i, :] = [14. 4. 45. 49.]
327 cord_individual_obj[indivial_i, :] = [15. 6. 30. 36.]
328 cord_individual_obj[indivial_i, :] = [16. 5. 73. 78.]
329 cord_individual_obj[indivial_i, :] = [17. 6. 44. 50.]
330 cord_individual_obj[indivial_i, :] = [18. 5. 51. 56.]
331 cord_individual_obj[indivial_i, :] = [19. 4. 46. 50.]

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332 cord_individual_obj[indivial_i,:] = [20. 4. 31. 35.]
333 cord_individual_obj[indivial_i,:] = [21. 4. 93. 97.]
334 cord_individual_obj[indivial_i,:] = [22. 4. 58. 62.]
335 cord_individual_obj[indivial_i,:] = [23. 4. 58. 62.]
336 cord_individual_obj[indivial_i,:] = [24. 5. 80. 85.]
337
338 min(cord_individual_obj[:,3]) = 16.0
339 histol_G_best_iter[iter,3] = 16.0
340 Begin iteration:
341
342 iter = 10
343 cord_individual_obj[indivial_i,:] = [ 0. 6. 50. 56.]
344 cord_individual_obj[indivial_i,:] = [ 1. 6. 40. 46.]
345 cord_individual_obj[indivial_i,:] = [ 2. 4. 75. 79.]
346 cord_individual_obj[indivial_i,:] = [ 3. 4. 54. 58.]
347 cord_individual_obj[indivial_i,:] = [ 4. 5. 87. 92.]
348 cord_individual_obj[indivial_i,:] = [ 5. 6. 51. 57.]
349 cord_individual_obj[indivial_i,:] = [ 6. 5. 70. 75.]
350 cord_individual_obj[indivial_i,:] = [ 7. 6. 32. 38.]
351 cord_individual_obj[indivial_i,:] = [ 8. 6. 55. 61.]
352 cord_individual_obj[indivial_i,:] = [ 9. 3. 54. 57.]
353 cord_individual_obj[indivial_i,:] = [10. 5. 68. 73.]
354 cord_individual_obj[indivial_i,:] = [11. 6. 49. 55.]
355 cord_individual_obj[indivial_i,:] = [12. 6. 69. 75.]
356 cord_individual_obj[indivial_i,:] = [13. 6. 66. 72.]
357 cord_individual_obj[indivial_i,:] = [14. 4. 58. 62.]
358 cord_individual_obj[indivial_i,:] = [15. 5. 52. 57.]
359 cord_individual_obj[indivial_i,:] = [16. 4. 115. 119.]
360 cord_individual_obj[indivial_i,:] = [17. 5. 49. 54.]
361 cord_individual_obj[indivial_i,:] = [18. 6. 32. 38.]
362 cord_individual_obj[indivial_i,:] = [19. 4. 49. 53.]
363 cord_individual_obj[indivial_i,:] = [20. 5. 130. 135.]
364 cord_individual_obj[indivial_i,:] = [21. 4. 12. 16.]
365 cord_individual_obj[indivial_i,:] = [22. 5. 59. 64.]
366 cord_individual_obj[indivial_i,:] = [23. 4. 83. 87.]
367 cord_individual_obj[indivial_i,:] = [24. 4. 67. 71.]
368
369 min(cord_individual_obj[:,3]) = 16.0
370 histol_G_best_iter[iter,3] = 16.0
371 Begin iteration:
372
373 iter = 11
374 cord_individual_obj[indivial_i,:] = [ 0. 6. 30. 36.]
375 cord_individual_obj[indivial_i,:] = [ 1. 5. 51. 56.]
376 cord_individual_obj[indivial_i,:] = [ 2. 5. 49. 54.]
377 cord_individual_obj[indivial_i,:] = [ 3. 5. 51. 56.]
378 cord_individual_obj[indivial_i,:] = [ 4. 5. 49. 54.]
379 cord_individual_obj[indivial_i,:] = [ 5. 5. 18. 23.]
380 cord_individual_obj[indivial_i,:] = [ 6. 4. 63. 67.]
381 cord_individual_obj[indivial_i,:] = [ 7. 6. 31. 37.]
382 cord_individual_obj[indivial_i,:] = [ 8. 5. 38. 43.]
383 cord_individual_obj[indivial_i,:] = [ 9. 6. 56. 62.]
384 cord_individual_obj[indivial_i,:] = [10. 4. 57. 61.]
385 cord_individual_obj[indivial_i,:] = [11. 4. 66. 70.]
386 cord_individual_obj[indivial_i,:] = [12. 6. 73. 79.]
387 cord_individual_obj[indivial_i,:] = [13. 4. 48. 52.]
388 cord_individual_obj[indivial_i,:] = [14. 4. 58. 62.]
389 cord_individual_obj[indivial_i,:] = [15. 4. 42. 46.]
390 cord_individual_obj[indivial_i,:] = [16. 5. 58. 63.]
391 cord_individual_obj[indivial_i,:] = [17. 4. 43. 47.]
392 cord_individual_obj[indivial_i,:] = [18. 5. 116. 121.]
393 cord_individual_obj[indivial_i,:] = [19. 6. 54. 60.]
394 cord_individual_obj[indivial_i,:] = [20. 4. 12. 16.]
395 cord_individual_obj[indivial_i,:] = [21. 6. 113. 119.]
396 cord_individual_obj[indivial_i,:] = [22. 6. 81. 87.]
397 cord_individual_obj[indivial_i,:] = [23. 4. 55. 59.]
398 cord_individual_obj[indivial_i,:] = [24. 5. 60. 65.]
399
400 min(cord_individual_obj[:,3]) = 16.0
401 histol_G_best_iter[iter,3] = 16.0
402 Begin iteration:
403
404 iter = 12
405 cord_individual_obj[indivial_i,:] = [ 0. 4. 36. 40.]
406 cord_individual_obj[indivial_i,:] = [ 1. 6. 26. 32.]
407 cord_individual_obj[indivial_i,:] = [ 2. 5. 98. 103.]
408 cord_individual_obj[indivial_i,:] = [ 3. 6. 24. 30.]
409 cord_individual_obj[indivial_i,:] = [ 4. 5. 77. 82.]
410 cord_individual_obj[indivial_i,:] = [ 5. 5. 25. 30.]
411 cord_individual_obj[indivial_i,:] = [ 6. 5. 161. 166.]
412 cord_individual_obj[indivial_i,:] = [ 7. 5. 22. 27.]
413 cord_individual_obj[indivial_i,:] = [ 8. 6. 20. 26.]
414 cord_individual_obj[indivial_i,:] = [ 9. 4. 93. 97.]
415 cord_individual_obj[indivial_i,:] = [10. 4. 35. 39.]

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416 cord_individual_obj[indivial_i,:] = [11. 5. 19. 24.]
417 cord_individual_obj[indivial_i,:] = [12. 6. 91. 97.]
418 cord_individual_obj[indivial_i,:] = [13. 6. 72. 78.]
419 cord_individual_obj[indivial_i,:] = [14. 5. 13. 18.]
420 cord_individual_obj[indivial_i,:] = [15. 6. 61. 67.]
421 cord_individual_obj[indivial_i,:] = [16. 6. 36. 42.]
422 cord_individual_obj[indivial_i,:] = [17. 6. 108. 114.]
423 cord_individual_obj[indivial_i,:] = [18. 4. 12. 16.]
424 cord_individual_obj[indivial_i,:] = [19. 3. 69. 72.]
425 cord_individual_obj[indivial_i,:] = [20. 5. 55. 60.]
426 cord_individual_obj[indivial_i,:] = [21. 4. 43. 47.]
427 cord_individual_obj[indivial_i,:] = [22. 5. 62. 67.]
428 cord_individual_obj[indivial_i,:] = [23. 5. 92. 97.]
429 cord_individual_obj[indivial_i,:] = [24. 5. 110. 115.]
430
431 min(cord_individual_obj[:,3]) = 16.0
432 histol_G_best_iter[iter,3] = 16.0
433 Begin iteration:
434
435 iter = 13
436 cord_individual_obj[indivial_i,:] = [ 0. 6. 43. 49.]
437 cord_individual_obj[indivial_i,:] = [ 1. 5. 49. 54.]
438 cord_individual_obj[indivial_i,:] = [ 2. 6. 54. 60.]
439 cord_individual_obj[indivial_i,:] = [ 3. 5. 73. 78.]
440 cord_individual_obj[indivial_i,:] = [ 4. 4. 14. 18.]
441 cord_individual_obj[indivial_i,:] = [ 5. 7. 29. 36.]
442 cord_individual_obj[indivial_i,:] = [ 6. 4. 12. 16.]
443 cord_individual_obj[indivial_i,:] = [ 7. 6. 34. 40.]
444 cord_individual_obj[indivial_i,:] = [ 8. 6. 28. 34.]
445 cord_individual_obj[indivial_i,:] = [ 9. 6. 30. 36.]
446 cord_individual_obj[indivial_i,:] = [10. 5. 44. 49.]
447 cord_individual_obj[indivial_i,:] = [11. 6. 52. 58.]
448 cord_individual_obj[indivial_i,:] = [12. 7. 33. 40.]
449 cord_individual_obj[indivial_i,:] = [13. 7. 48. 55.]
450 cord_individual_obj[indivial_i,:] = [14. 4. 59. 63.]
451 cord_individual_obj[indivial_i,:] = [15. 4. 42. 46.]
452 cord_individual_obj[indivial_i,:] = [16. 5. 58. 63.]
453 cord_individual_obj[indivial_i,:] = [17. 4. 62. 66.]
454 cord_individual_obj[indivial_i,:] = [18. 6. 50. 56.]
455 cord_individual_obj[indivial_i,:] = [19. 5. 58. 63.]
456 cord_individual_obj[indivial_i,:] = [20. 4. 35. 39.]
457 cord_individual_obj[indivial_i,:] = [21. 7. 55. 62.]
458 cord_individual_obj[indivial_i,:] = [22. 4. 50. 54.]
459 cord_individual_obj[indivial_i,:] = [23. 6. 35. 41.]
460 cord_individual_obj[indivial_i,:] = [24. 3. 16. 19.]
461
462 min(cord_individual_obj[:,3]) = 16.0
463 histol_G_best_iter[iter,3] = 16.0
464 Begin iteration:
465
466 iter = 14
467 cord_individual_obj[indivial_i,:] = [ 0. 6. 49. 55.]
468 cord_individual_obj[indivial_i,:] = [ 1. 6. 54. 60.]
469 cord_individual_obj[indivial_i,:] = [ 2. 5. 47. 52.]
470 cord_individual_obj[indivial_i,:] = [ 3. 4. 12. 16.]
471 cord_individual_obj[indivial_i,:] = [ 4. 6. 78. 84.]
472 cord_individual_obj[indivial_i,:] = [ 5. 5. 47. 52.]
473 cord_individual_obj[indivial_i,:] = [ 6. 5. 71. 76.]
474 cord_individual_obj[indivial_i,:] = [ 7. 5. 18. 23.]
475 cord_individual_obj[indivial_i,:] = [ 8. 6. 86. 92.]
476 cord_individual_obj[indivial_i,:] = [ 9. 6. 30. 36.]
477 cord_individual_obj[indivial_i,:] = [10. 4. 49. 53.]
478 cord_individual_obj[indivial_i,:] = [11. 6. 49. 55.]
479 cord_individual_obj[indivial_i,:] = [12. 6. 95. 101.]
480 cord_individual_obj[indivial_i,:] = [13. 7. 59. 66.]
481 cord_individual_obj[indivial_i,:] = [14. 4. 58. 62.]
482 cord_individual_obj[indivial_i,:] = [15. 6. 29. 35.]
483 cord_individual_obj[indivial_i,:] = [16. 5. 60. 65.]
484 cord_individual_obj[indivial_i,:] = [17. 4. 42. 46.]
485 cord_individual_obj[indivial_i,:] = [18. 6. 61. 67.]
486 cord_individual_obj[indivial_i,:] = [19. 5. 48. 53.]
487 cord_individual_obj[indivial_i,:] = [20. 4. 41. 45.]
488 cord_individual_obj[indivial_i,:] = [21. 4. 59. 63.]
489 cord_individual_obj[indivial_i,:] = [22. 6. 23. 29.]
490 cord_individual_obj[indivial_i,:] = [23. 6. 62. 68.]
491 cord_individual_obj[indivial_i,:] = [24. 5. 67. 72.]
492
493 min(cord_individual_obj[:,3]) = 16.0
494 histol_G_best_iter[iter,3] = 16.0
495 Begin iteration:
496
497 iter = 15
498 cord_individual_obj[indivial_i,:] = [ 0. 7. 30. 37.]
499 cord_individual_obj[indivial_i,:] = [ 1. 5. 100. 105.]

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500 cord_individual_obj[indivial_i,:] = [ 2. 5. 34. 39.]
501 cord_individual_obj[indivial_i,:] = [ 3. 4. 54. 58.]
502 cord_individual_obj[indivial_i,:] = [ 4. 4. 84. 88.]
503 cord_individual_obj[indivial_i,:] = [ 5. 4. 36. 40.]
504 cord_individual_obj[indivial_i,:] = [ 6. 5. 46. 51.]
505 cord_individual_obj[indivial_i,:] = [ 7. 5. 28. 33.]
506 cord_individual_obj[indivial_i,:] = [ 8. 8. 33. 41.]
507 cord_individual_obj[indivial_i,:] = [ 9. 5. 73. 78.]
508 cord_individual_obj[indivial_i,:] = [10. 3. 82. 85.]
509 cord_individual_obj[indivial_i,:] = [11. 6. 59. 65.]
510 cord_individual_obj[indivial_i,:] = [12. 4. 12. 16.]
511 cord_individual_obj[indivial_i,:] = [13. 6. 31. 37.]
512 cord_individual_obj[indivial_i,:] = [14. 5. 98. 103.]
513 cord_individual_obj[indivial_i,:] = [15. 4. 103. 107.]
514 cord_individual_obj[indivial_i,:] = [16. 5. 56. 61.]
515 cord_individual_obj[indivial_i,:] = [17. 6. 74. 80.]
516 cord_individual_obj[indivial_i,:] = [18. 5. 27. 32.]
517 cord_individual_obj[indivial_i,:] = [19. 6. 46. 52.]
518 cord_individual_obj[indivial_i,:] = [20. 6. 30. 36.]
519 cord_individual_obj[indivial_i,:] = [21. 5. 48. 53.]
520 cord_individual_obj[indivial_i,:] = [22. 4. 19. 23.]
521 cord_individual_obj[indivial_i,:] = [23. 7. 63. 70.]
522 cord_individual_obj[indivial_i,:] = [24. 4. 66. 70.]
523
524 min(cord_individual_obj[:, 3]) = 16.0
525 histol_G_best_iter[iter, 3] = 16.0
526 Begin iteration:
527
528 iter = 16
529 cord_individual_obj[indivial_i,:] = [ 0. 6. 32. 38.]
530 cord_individual_obj[indivial_i,:] = [ 1. 5. 108. 113.]
531 cord_individual_obj[indivial_i,:] = [ 2. 4. 75. 79.]
532 cord_individual_obj[indivial_i,:] = [ 3. 7. 32. 39.]
533 cord_individual_obj[indivial_i,:] = [ 4. 7. 55. 62.]
534 cord_individual_obj[indivial_i,:] = [ 5. 5. 132. 137.]
535 cord_individual_obj[indivial_i,:] = [ 6. 7. 94. 101.]
536 cord_individual_obj[indivial_i,:] = [ 7. 7. 22. 29.]
537 cord_individual_obj[indivial_i,:] = [ 8. 6. 13. 19.]
538 cord_individual_obj[indivial_i,:] = [ 9. 4. 41. 45.]
539 cord_individual_obj[indivial_i,:] = [10. 5. 49. 54.]
540 cord_individual_obj[indivial_i,:] = [11. 6. 54. 60.]
541 cord_individual_obj[indivial_i,:] = [12. 7. 53. 60.]
542 cord_individual_obj[indivial_i,:] = [13. 6. 78. 84.]
543 cord_individual_obj[indivial_i,:] = [14. 5. 48. 53.]
544 cord_individual_obj[indivial_i,:] = [15. 4. 12. 16.]
545 cord_individual_obj[indivial_i,:] = [16. 5. 117. 122.]
546 cord_individual_obj[indivial_i,:] = [17. 4. 50. 54.]
547 cord_individual_obj[indivial_i,:] = [18. 6. 21. 27.]
548 cord_individual_obj[indivial_i,:] = [19. 5. 34. 39.]
549 cord_individual_obj[indivial_i,:] = [20. 5. 45. 50.]
550 cord_individual_obj[indivial_i,:] = [21. 5. 53. 58.]
551 cord_individual_obj[indivial_i,:] = [22. 6. 95. 101.]
552 cord_individual_obj[indivial_i,:] = [23. 4. 46. 50.]
553 cord_individual_obj[indivial_i,:] = [24. 4. 38. 42.]
554
555 min(cord_individual_obj[:, 3]) = 16.0
556 histol_G_best_iter[iter, 3] = 16.0
557 Begin iteration:
558
559 iter = 17
560 cord_individual_obj[indivial_i,:] = [ 0. 5. 47. 52.]
561 cord_individual_obj[indivial_i,:] = [ 1. 8. 86. 94.]
562 cord_individual_obj[indivial_i,:] = [ 2. 4. 17. 21.]
563 cord_individual_obj[indivial_i,:] = [ 3. 6. 30. 36.]
564 cord_individual_obj[indivial_i,:] = [ 4. 6. 71. 77.]
565 cord_individual_obj[indivial_i,:] = [ 5. 4. 12. 16.]
566 cord_individual_obj[indivial_i,:] = [ 6. 4. 70. 74.]
567 cord_individual_obj[indivial_i,:] = [ 7. 4. 61. 65.]
568 cord_individual_obj[indivial_i,:] = [ 8. 6. 53. 59.]
569 cord_individual_obj[indivial_i,:] = [ 9. 5. 71. 76.]
570 cord_individual_obj[indivial_i,:] = [10. 4. 45. 49.]
571 cord_individual_obj[indivial_i,:] = [11. 5. 50. 55.]
572 cord_individual_obj[indivial_i,:] = [12. 8. 73. 81.]
573 cord_individual_obj[indivial_i,:] = [13. 7. 44. 51.]
574 cord_individual_obj[indivial_i,:] = [14. 4. 89. 93.]
575 cord_individual_obj[indivial_i,:] = [15. 6. 29. 35.]
576 cord_individual_obj[indivial_i,:] = [16. 5. 53. 58.]
577 cord_individual_obj[indivial_i,:] = [17. 6. 43. 49.]
578 cord_individual_obj[indivial_i,:] = [18. 6. 54. 60.]
579 cord_individual_obj[indivial_i,:] = [19. 4. 49. 53.]
580 cord_individual_obj[indivial_i,:] = [20. 5. 54. 59.]
581 cord_individual_obj[indivial_i,:] = [21. 5. 16. 21.]
582 cord_individual_obj[indivial_i,:] = [22. 6. 28. 34.]
583 cord_individual_obj[indivial_i,:] = [23. 4. 82. 86.]

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unknown

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584     cord_individual_obj[indivial_i, :] = [24. 4. 56. 60.]  
585  
586     min(cord_individual_obj[:, 3]) = 16.0  
587     historl_G_best_iter[iter, 3] = 16.0  
588 Begin iteration:  
589  
590 iter = 18  
591     cord_individual_obj[indivial_i, :] = [ 0. 6. 40. 46.]  
592     cord_individual_obj[indivial_i, :] = [ 1. 4. 12. 16.]  
593     cord_individual_obj[indivial_i, :] = [ 2. 5. 92. 97.]  
594     cord_individual_obj[indivial_i, :] = [ 3. 4. 54. 58.]  
595     cord_individual_obj[indivial_i, :] = [ 4. 6. 13. 19.]  
596     cord_individual_obj[indivial_i, :] = [ 5. 6. 22. 28.]  
597     cord_individual_obj[indivial_i, :] = [ 6. 4. 71. 75.]  
598     cord_individual_obj[indivial_i, :] = [ 7. 6. 31. 37.]  
599     cord_individual_obj[indivial_i, :] = [ 8. 6. 51. 57.]  
600     cord_individual_obj[indivial_i, :] = [ 9. 6. 29. 35.]  
601     cord_individual_obj[indivial_i, :] = [10. 4. 36. 40.]  
602     cord_individual_obj[indivial_i, :] = [11. 6. 49. 55.]  
603     cord_individual_obj[indivial_i, :] = [12. 6. 34. 40.]  
604     cord_individual_obj[indivial_i, :] = [13. 4. 28. 32.]  
605     cord_individual_obj[indivial_i, :] = [14. 3. 59. 62.]  
606     cord_individual_obj[indivial_i, :] = [15. 6. 30. 36.]  
607     cord_individual_obj[indivial_i, :] = [16. 6. 39. 45.]  
608     cord_individual_obj[indivial_i, :] = [17. 5. 55. 60.]  
609     cord_individual_obj[indivial_i, :] = [18. 6. 40. 46.]  
610     cord_individual_obj[indivial_i, :] = [19. 6. 47. 53.]  
611     cord_individual_obj[indivial_i, :] = [20. 5. 55. 60.]  
612     cord_individual_obj[indivial_i, :] = [21. 4. 95. 99.]  
613     cord_individual_obj[indivial_i, :] = [22. 5. 29. 34.]  
614     cord_individual_obj[indivial_i, :] = [23. 6. 51. 57.]  
615     cord_individual_obj[indivial_i, :] = [24. 4. 78. 82.]  
616  
617     min(cord_individual_obj[:, 3]) = 16.0  
618     historl_G_best_iter[iter, 3] = 16.0  
619 Begin iteration:  
620  
621 iter = 19  
622     cord_individual_obj[indivial_i, :] = [ 0. 5. 30. 35.]  
623     cord_individual_obj[indivial_i, :] = [ 1. 6. 58. 64.]  
624     cord_individual_obj[indivial_i, :] = [ 2. 7. 16. 23.]  
625     cord_individual_obj[indivial_i, :] = [ 3. 6. 60. 66.]  
626     cord_individual_obj[indivial_i, :] = [ 4. 6. 37. 43.]  
627     cord_individual_obj[indivial_i, :] = [ 5. 6. 178. 184.]  
628     cord_individual_obj[indivial_i, :] = [ 6. 4. 88. 92.]  
629     cord_individual_obj[indivial_i, :] = [ 7. 4. 27. 31.]  
630     cord_individual_obj[indivial_i, :] = [ 8. 7. 20. 27.]  
631     cord_individual_obj[indivial_i, :] = [ 9. 6. 73. 79.]  
632     cord_individual_obj[indivial_i, :] = [10. 4. 90. 94.]  
633     cord_individual_obj[indivial_i, :] = [11. 4. 93. 97.]  
634     cord_individual_obj[indivial_i, :] = [12. 7. 33. 40.]  
635     cord_individual_obj[indivial_i, :] = [13. 5. 35. 40.]  
636     cord_individual_obj[indivial_i, :] = [14. 5. 16. 21.]  
637     cord_individual_obj[indivial_i, :] = [15. 5. 99. 104.]  
638     cord_individual_obj[indivial_i, :] = [16. 4. 135. 139.]  
639     cord_individual_obj[indivial_i, :] = [17. 6. 83. 89.]  
640     cord_individual_obj[indivial_i, :] = [18. 6. 38. 44.]  
641     cord_individual_obj[indivial_i, :] = [19. 6. 23. 29.]  
642     cord_individual_obj[indivial_i, :] = [20. 5. 34. 39.]  
643     cord_individual_obj[indivial_i, :] = [21. 4. 12. 16.]  
644     cord_individual_obj[indivial_i, :] = [22. 7. 37. 44.]  
645     cord_individual_obj[indivial_i, :] = [23. 6. 79. 85.]  
646     cord_individual_obj[indivial_i, :] = [24. 5. 97. 102.]  
647  
648     min(cord_individual_obj[:, 3]) = 16.0  
649     historl_G_best_iter[iter, 3] = 16.0  
650 Begin iteration:  
651  
652 iter = 20  
653     cord_individual_obj[indivial_i, :] = [ 0. 6. 40. 46.]  
654     cord_individual_obj[indivial_i, :] = [ 1. 6. 50. 56.]  
655     cord_individual_obj[indivial_i, :] = [ 2. 5. 53. 58.]  
656     cord_individual_obj[indivial_i, :] = [ 3. 4. 53. 57.]  
657     cord_individual_obj[indivial_i, :] = [ 4. 4. 38. 42.]  
658     cord_individual_obj[indivial_i, :] = [ 5. 4. 12. 16.]  
659     cord_individual_obj[indivial_i, :] = [ 6. 5. 71. 76.]  
660     cord_individual_obj[indivial_i, :] = [ 7. 6. 33. 39.]  
661     cord_individual_obj[indivial_i, :] = [ 8. 6. 51. 57.]  
662     cord_individual_obj[indivial_i, :] = [ 9. 5. 43. 48.]  
663     cord_individual_obj[indivial_i, :] = [10. 4. 36. 40.]  
664     cord_individual_obj[indivial_i, :] = [11. 5. 71. 76.]  
665     cord_individual_obj[indivial_i, :] = [12. 6. 54. 60.]  
666     cord_individual_obj[indivial_i, :] = [13. 7. 51. 58.]  
667     cord_individual_obj[indivial_i, :] = [14. 5. 61. 66.]
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668 cord_individual_obj[indivial_i,:] = [15. 5. 43. 48.]
669 cord_individual_obj[indivial_i,:] = [16. 5. 61. 66.]
670 cord_individual_obj[indivial_i,:] = [17. 7. 45. 52.]
671 cord_individual_obj[indivial_i,:] = [18. 6. 40. 46.]
672 cord_individual_obj[indivial_i,:] = [19. 4. 49. 53.]
673 cord_individual_obj[indivial_i,:] = [20. 5. 63. 68.]
674 cord_individual_obj[indivial_i,:] = [21. 4. 113. 117.]
675 cord_individual_obj[indivial_i,:] = [22. 3. 59. 62.]
676 cord_individual_obj[indivial_i,:] = [23. 4. 64. 68.]
677 cord_individual_obj[indivial_i,:] = [24. 5. 67. 72.]
678
679 min(cord_individual_obj[:, 3]) = 16.0
680 historl_G_best_iter[iter, 3] = 16.0
681 Iteration calculate over
682
683
684
685
686 All item are in Bin and:
687 Bin area = 1080
688 Real_area = 117.0
689 Proportion_of_area = 0.1083333333333334
690 BEST_CHROM =
691     berth: [3.5 3. 10.5 15.5 18.5 4. 15.5 8.5 24. 3. ]
692     time: [0. 3. 0. 0. 0. 2. 3. 3. 0. 1.]
693     num_QC: [5. 4. 3. 2. 3. 5. 2. 3. 2. 6.]
694 Objective function values and some other indicators:
695 Obj0 = 4.00          Obj1 = 12.00          Obj0 + Obj1 = 16.00
696 Total movement of crane: 0.00
697 Total waiting time in berth position: 12.00
698 Total index of q during berthing: 446.00
699 Specific arrangement for each vessel:
700
    V_id: 0           li: 7.0           xi: 3.5           bow of i: 0.0           tail of i: 7.0           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
80.0               work load gap_i: 0
701
    V_id: 1           li: 6.0           xi: 3.0           bow of i: 0.0           tail of i: 6.0           gama_i0: 3.0           gama_i1: 4.0
    .0                 gama_i1 + 1: 5.0   gama_i1 - gama_i0: 1.0   duration_time_i: 2.0
120.0              work load gap_i: 0
702
    V_id: 2           li: 7.0           xi: 10.5          bow of i: 7.0           tail of i: 14.0          gama_i0: 0.0           gama_i1: 1
    .0                 gama_i1 + 1: 2.0   gama_i1 - gama_i0: 1.0   duration_time_i: 2.0
load_i: 120.0      work load gap_i: 0
703
    V_id: 3           li: 3.0           xi: 15.5          bow of i: 14.0          tail of i: 17.0          gama_i0: 0.0           gama_i1: 2
    .0                 gama_i1 + 1: 3.0   gama_i1 - gama_i0: 2.0   duration_time_i: 3.0
load_i: 120.0      work load gap_i: 0
704
    V_id: 4           li: 3.0           xi: 18.5          bow of i: 17.0          tail of i: 20.0          gama_i0: 0.0           gama_i1: 1
    .0                 gama_i1 + 1: 2.0   gama_i1 - gama_i0: 1.0   duration_time_i: 2.0
load_i: 80.0        work load gap_i: 0
705
    V_id: 5           li: 8.0           xi: 4.0            bow of i: 0.0           tail of i: 8.0           gama_i0: 2.0           gama_i1: 2
    .0                 gama_i1 + 1: 3.0   gama_i1 - gama_i0: 0.0   duration_time_i: 1.0
80.0               work load gap_i: 0
706
    V_id: 6           li: 9.0           xi: 15.5          bow of i: 11.0          tail of i: 20.0          gama_i0: 3.0           gama_i1: 4
    .0                 gama_i1 + 1: 5.0   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: 5.0           xi: 8.5            bow of i: 6.0           tail of i: 11.0          gama_i0: 3.0           gama_i1: 4
    .0                 gama_i1 + 1: 5.0   gama_i1 - gama_i0: 1.0   duration_time_i: 2.0
100.0              work load gap_i: 0
708
    V_id: 8           li: 8.0           xi: 24.0          bow of i: 20.0          tail of i: 28.0          gama_i0: 0.0           gama_i1: 3
    .0                 gama_i1 + 1: 4.0   gama_i1 - gama_i0: 3.0   duration_time_i: 4.0
load_i: 140.0       work load gap_i: 0
709
    V_id: 9           li: 6.0           xi: 3.0            bow of i: 0.0           tail of i: 6.0           gama_i0: 1.0           gama_i1: 1
    .0                 gama_i1 + 1: 2.0   gama_i1 - gama_i0: 0.0   duration_time_i: 1.0
100.0              work load gap_i: 0
710
711 Algorithm finished and the total CPU time: 260 s
712 End
713

```