

unknown

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80 cord_individual_obj[indivial_i,:] = [16. 5. 55. 60.]
81 cord_individual_obj[indivial_i,:] = [17. 7. 91. 98.]
82 cord_individual_obj[indivial_i,:] = [18. 3. 15. 18.]
83 cord_individual_obj[indivial_i,:] = [19. 5. 86. 91.]
84 cord_individual_obj[indivial_i,:] = [20. 3. 61. 64.]
85 cord_individual_obj[indivial_i,:] = [21. 6. 89. 95.]
86 cord_individual_obj[indivial_i,:] = [22. 4. 86. 90.]
87 cord_individual_obj[indivial_i,:] = [23. 6. 49. 55.]
88 cord_individual_obj[indivial_i,:] = [24. 5. 61. 66.]
89
90 min(cord_individual_obj[:,3]) = 12.0
91 historl_G_best_iter[iter, 3] = 12.0
92 Begin iteration:
93
94 iter = 2
95 cord_individual_obj[indivial_i,:] = [ 0. 3. 9. 12.]
96 cord_individual_obj[indivial_i,:] = [ 1. 6. 43. 49.]
97 cord_individual_obj[indivial_i,:] = [ 2. 5. 88. 93.]
98 cord_individual_obj[indivial_i,:] = [ 3. 7. 91. 98.]
99 cord_individual_obj[indivial_i,:] = [ 4. 4. 100. 104.]
100 cord_individual_obj[indivial_i,:] = [ 5. 5. 101. 106.]
101 cord_individual_obj[indivial_i,:] = [ 6. 6. 76. 82.]
102 cord_individual_obj[indivial_i,:] = [ 7. 4. 15. 19.]
103 cord_individual_obj[indivial_i,:] = [ 8. 6. 74. 80.]
104 cord_individual_obj[indivial_i,:] = [ 9. 5. 84. 89.]
105 cord_individual_obj[indivial_i,:] = [10. 4. 44. 48.]
106 cord_individual_obj[indivial_i,:] = [11. 3. 83. 86.]
107 cord_individual_obj[indivial_i,:] = [12. 5. 29. 34.]
108 cord_individual_obj[indivial_i,:] = [13. 5. 77. 82.]
109 cord_individual_obj[indivial_i,:] = [14. 5. 16. 21.]
110 cord_individual_obj[indivial_i,:] = [15. 5. 75. 80.]
111 cord_individual_obj[indivial_i,:] = [16. 4. 64. 68.]
112 cord_individual_obj[indivial_i,:] = [17. 4. 14. 18.]
113 cord_individual_obj[indivial_i,:] = [18. 5. 88. 93.]
114 cord_individual_obj[indivial_i,:] = [19. 5. 112. 117.]
115 cord_individual_obj[indivial_i,:] = [20. 3. 61. 64.]
116 cord_individual_obj[indivial_i,:] = [21. 4. 59. 63.]
117 cord_individual_obj[indivial_i,:] = [22. 4. 76. 80.]
118 cord_individual_obj[indivial_i,:] = [23. 5. 49. 54.]
119 cord_individual_obj[indivial_i,:] = [24. 5. 93. 98.]
120
121 min(cord_individual_obj[:,3]) = 12.0
122 historl_G_best_iter[iter, 3] = 12.0
123 Begin iteration:
124
125 iter = 3
126 cord_individual_obj[indivial_i,:] = [ 0. 4. 122. 126.]
127 cord_individual_obj[indivial_i,:] = [ 1. 6. 24. 30.]
128 cord_individual_obj[indivial_i,:] = [ 2. 5. 88. 93.]
129 cord_individual_obj[indivial_i,:] = [ 3. 6. 60. 66.]
130 cord_individual_obj[indivial_i,:] = [ 4. 5. 73. 78.]
131 cord_individual_obj[indivial_i,:] = [ 5. 5. 101. 106.]
132 cord_individual_obj[indivial_i,:] = [ 6. 4. 40. 44.]
133 cord_individual_obj[indivial_i,:] = [ 7. 4. 49. 53.]
134 cord_individual_obj[indivial_i,:] = [ 8. 6. 84. 90.]
135 cord_individual_obj[indivial_i,:] = [ 9. 6. 63. 69.]
136 cord_individual_obj[indivial_i,:] = [10. 5. 44. 49.]
137 cord_individual_obj[indivial_i,:] = [11. 4. 48. 52.]
138 cord_individual_obj[indivial_i,:] = [12. 5. 29. 34.]
139 cord_individual_obj[indivial_i,:] = [13. 5. 36. 41.]
140 cord_individual_obj[indivial_i,:] = [14. 7. 85. 92.]
141 cord_individual_obj[indivial_i,:] = [15. 7. 70. 77.]
142 cord_individual_obj[indivial_i,:] = [16. 4. 50. 54.]
143 cord_individual_obj[indivial_i,:] = [17. 7. 92. 99.]
144 cord_individual_obj[indivial_i,:] = [18. 3. 122. 125.]
145 cord_individual_obj[indivial_i,:] = [19. 3. 9. 12.]
146 cord_individual_obj[indivial_i,:] = [20. 5. 68. 73.]
147 cord_individual_obj[indivial_i,:] = [21. 4. 83. 87.]
148 cord_individual_obj[indivial_i,:] = [22. 4. 66. 70.]
149 cord_individual_obj[indivial_i,:] = [23. 5. 79. 84.]
150 cord_individual_obj[indivial_i,:] = [24. 5. 65. 70.]
151
152 min(cord_individual_obj[:,3]) = 12.0
153 historl_G_best_iter[iter, 3] = 12.0
154 Begin iteration:
155
156 iter = 4
157 cord_individual_obj[indivial_i,:] = [ 0. 3. 9. 12.]
158 cord_individual_obj[indivial_i,:] = [ 1. 6. 61. 67.]
159 cord_individual_obj[indivial_i,:] = [ 2. 4. 87. 91.]
160 cord_individual_obj[indivial_i,:] = [ 3. 7. 91. 98.]
161 cord_individual_obj[indivial_i,:] = [ 4. 3. 23. 26.]
162 cord_individual_obj[indivial_i,:] = [ 5. 5. 101. 106.]
163 cord_individual_obj[indivial_i,:] = [ 6. 4. 58. 62.]

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164 cord_individual_obj[indivial_i,:] = [ 7. 4. 71. 75.]
165 cord_individual_obj[indivial_i,:] = [ 8. 5. 80. 85.]
166 cord_individual_obj[indivial_i,:] = [ 9. 4. 71. 75.]
167 cord_individual_obj[indivial_i,:] = [10. 4. 64. 68.]
168 cord_individual_obj[indivial_i,:] = [11. 5. 46. 51.]
169 cord_individual_obj[indivial_i,:] = [12. 5. 39. 44.]
170 cord_individual_obj[indivial_i,:] = [13. 5. 109. 114.]
171 cord_individual_obj[indivial_i,:] = [14. 4. 55. 59.]
172 cord_individual_obj[indivial_i,:] = [15. 7. 64. 71.]
173 cord_individual_obj[indivial_i,:] = [16. 4. 32. 36.]
174 cord_individual_obj[indivial_i,:] = [17. 4. 112. 116.]
175 cord_individual_obj[indivial_i,:] = [18. 5. 15. 20.]
176 cord_individual_obj[indivial_i,:] = [19. 5. 86. 91.]
177 cord_individual_obj[indivial_i,:] = [20. 6. 65. 71.]
178 cord_individual_obj[indivial_i,:] = [21. 5. 79. 84.]
179 cord_individual_obj[indivial_i,:] = [22. 4. 52. 56.]
180 cord_individual_obj[indivial_i,:] = [23. 4. 92. 96.]
181 cord_individual_obj[indivial_i,:] = [24. 5. 68. 73.]
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. 4. 122. 126.]
189 cord_individual_obj[indivial_i,:] = [ 1. 5. 77. 82.]
190 cord_individual_obj[indivial_i,:] = [ 2. 7. 88. 95.]
191 cord_individual_obj[indivial_i,:] = [ 3. 5. 110. 115.]
192 cord_individual_obj[indivial_i,:] = [ 4. 5. 85. 90.]
193 cord_individual_obj[indivial_i,:] = [ 5. 7. 79. 86.]
194 cord_individual_obj[indivial_i,:] = [ 6. 4. 20. 24.]
195 cord_individual_obj[indivial_i,:] = [ 7. 4. 63. 67.]
196 cord_individual_obj[indivial_i,:] = [ 8. 4. 62. 66.]
197 cord_individual_obj[indivial_i,:] = [ 9. 4. 31. 35.]
198 cord_individual_obj[indivial_i,:] = [10. 3. 92. 95.]
199 cord_individual_obj[indivial_i,:] = [11. 3. 76. 79.]
200 cord_individual_obj[indivial_i,:] = [12. 4. 62. 66.]
201 cord_individual_obj[indivial_i,:] = [13. 5. 84. 89.]
202 cord_individual_obj[indivial_i,:] = [14. 5. 71. 76.]
203 cord_individual_obj[indivial_i,:] = [15. 5. 64. 69.]
204 cord_individual_obj[indivial_i,:] = [16. 3. 113. 116.]
205 cord_individual_obj[indivial_i,:] = [17. 3. 9. 12.]
206 cord_individual_obj[indivial_i,:] = [18. 4. 26. 30.]
207 cord_individual_obj[indivial_i,:] = [19. 6. 89. 95.]
208 cord_individual_obj[indivial_i,:] = [20. 4. 86. 90.]
209 cord_individual_obj[indivial_i,:] = [21. 4. 26. 30.]
210 cord_individual_obj[indivial_i,:] = [22. 3. 13. 16.]
211 cord_individual_obj[indivial_i,:] = [23. 4. 52. 56.]
212 cord_individual_obj[indivial_i,:] = [24. 7. 51. 58.]
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. 3. 9. 12.]
220 cord_individual_obj[indivial_i,:] = [ 1. 5. 35. 40.]
221 cord_individual_obj[indivial_i,:] = [ 2. 5. 66. 71.]
222 cord_individual_obj[indivial_i,:] = [ 3. 5. 83. 88.]
223 cord_individual_obj[indivial_i,:] = [ 4. 4. 34. 38.]
224 cord_individual_obj[indivial_i,:] = [ 5. 4. 66. 70.]
225 cord_individual_obj[indivial_i,:] = [ 6. 4. 16. 20.]
226 cord_individual_obj[indivial_i,:] = [ 7. 4. 37. 41.]
227 cord_individual_obj[indivial_i,:] = [ 8. 5. 68. 73.]
228 cord_individual_obj[indivial_i,:] = [ 9. 4. 94. 98.]
229 cord_individual_obj[indivial_i,:] = [10. 4. 66. 70.]
230 cord_individual_obj[indivial_i,:] = [11. 5. 62. 67.]
231 cord_individual_obj[indivial_i,:] = [12. 5. 42. 47.]
232 cord_individual_obj[indivial_i,:] = [13. 4. 90. 94.]
233 cord_individual_obj[indivial_i,:] = [14. 4. 39. 43.]
234 cord_individual_obj[indivial_i,:] = [15. 4. 77. 81.]
235 cord_individual_obj[indivial_i,:] = [16. 4. 13. 17.]
236 cord_individual_obj[indivial_i,:] = [17. 4. 112. 116.]
237 cord_individual_obj[indivial_i,:] = [18. 4. 72. 76.]
238 cord_individual_obj[indivial_i,:] = [19. 5. 42. 47.]
239 cord_individual_obj[indivial_i,:] = [20. 3. 41. 44.]
240 cord_individual_obj[indivial_i,:] = [21. 7. 69. 76.]
241 cord_individual_obj[indivial_i,:] = [22. 3. 40. 43.]
242 cord_individual_obj[indivial_i,:] = [23. 4. 70. 74.]
243 cord_individual_obj[indivial_i,:] = [24. 6. 39. 45.]
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. 4. 122. 126.]
251 cord_individual_obj[indivial_i, :] = [ 1. 6. 87. 93.]
252 cord_individual_obj[indivial_i, :] = [ 2. 4. 87. 91.]
253 cord_individual_obj[indivial_i, :] = [ 3. 5. 31. 36.]
254 cord_individual_obj[indivial_i, :] = [ 4. 5. 16. 21.]
255 cord_individual_obj[indivial_i, :] = [ 5. 6. 104. 110.]
256 cord_individual_obj[indivial_i, :] = [ 6. 4. 16. 20.]
257 cord_individual_obj[indivial_i, :] = [ 7. 4. 71. 75.]
258 cord_individual_obj[indivial_i, :] = [ 8. 6. 43. 49.]
259 cord_individual_obj[indivial_i, :] = [ 9. 6. 63. 69.]
260 cord_individual_obj[indivial_i, :] = [10. 5. 88. 93.]
261 cord_individual_obj[indivial_i, :] = [11. 6. 89. 95.]
262 cord_individual_obj[indivial_i, :] = [12. 5. 29. 34.]
263 cord_individual_obj[indivial_i, :] = [13. 5. 31. 36.]
264 cord_individual_obj[indivial_i, :] = [14. 7. 85. 92.]
265 cord_individual_obj[indivial_i, :] = [15. 4. 57. 61.]
266 cord_individual_obj[indivial_i, :] = [16. 3. 49. 52.]
267 cord_individual_obj[indivial_i, :] = [17. 3. 9. 12.]
268 cord_individual_obj[indivial_i, :] = [18. 4. 122. 126.]
269 cord_individual_obj[indivial_i, :] = [19. 5. 106. 111.]
270 cord_individual_obj[indivial_i, :] = [20. 3. 56. 59.]
271 cord_individual_obj[indivial_i, :] = [21. 5. 83. 88.]
272 cord_individual_obj[indivial_i, :] = [22. 4. 46. 50.]
273 cord_individual_obj[indivial_i, :] = [23. 3. 96. 99.]
274 cord_individual_obj[indivial_i, :] = [24. 5. 74. 79.]
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. 3. 9. 12.]
282 cord_individual_obj[indivial_i, :] = [ 1. 4. 44. 48.]
283 cord_individual_obj[indivial_i, :] = [ 2. 5. 53. 58.]
284 cord_individual_obj[indivial_i, :] = [ 3. 3. 62. 65.]
285 cord_individual_obj[indivial_i, :] = [ 4. 3. 45. 48.]
286 cord_individual_obj[indivial_i, :] = [ 5. 3. 36. 39.]
287 cord_individual_obj[indivial_i, :] = [ 6. 7. 22. 29.]
288 cord_individual_obj[indivial_i, :] = [ 7. 5. 80. 85.]
289 cord_individual_obj[indivial_i, :] = [ 8. 5. 44. 49.]
290 cord_individual_obj[indivial_i, :] = [ 9. 3. 12. 15.]
291 cord_individual_obj[indivial_i, :] = [10. 3. 18. 21.]
292 cord_individual_obj[indivial_i, :] = [11. 3. 170. 173.]
293 cord_individual_obj[indivial_i, :] = [12. 5. 43. 48.]
294 cord_individual_obj[indivial_i, :] = [13. 5. 29. 34.]
295 cord_individual_obj[indivial_i, :] = [14. 5. 48. 53.]
296 cord_individual_obj[indivial_i, :] = [15. 5. 32. 37.]
297 cord_individual_obj[indivial_i, :] = [16. 5. 8. 13.]
298 cord_individual_obj[indivial_i, :] = [17. 5. 91. 96.]
299 cord_individual_obj[indivial_i, :] = [18. 4. 52. 56.]
300 cord_individual_obj[indivial_i, :] = [19. 5. 84. 89.]
301 cord_individual_obj[indivial_i, :] = [20. 5. 29. 34.]
302 cord_individual_obj[indivial_i, :] = [21. 5. 22. 27.]
303 cord_individual_obj[indivial_i, :] = [22. 3. 50. 53.]
304 cord_individual_obj[indivial_i, :] = [23. 4. 64. 68.]
305 cord_individual_obj[indivial_i, :] = [24. 5. 47. 52.]
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. 4. 122. 126.]
313 cord_individual_obj[indivial_i, :] = [ 1. 5. 27. 32.]
314 cord_individual_obj[indivial_i, :] = [ 2. 5. 78. 83.]
315 cord_individual_obj[indivial_i, :] = [ 3. 4. 43. 47.]
316 cord_individual_obj[indivial_i, :] = [ 4. 5. 26. 31.]
317 cord_individual_obj[indivial_i, :] = [ 5. 5. 68. 73.]
318 cord_individual_obj[indivial_i, :] = [ 6. 3. 71. 74.]
319 cord_individual_obj[indivial_i, :] = [ 7. 5. 58. 63.]
320 cord_individual_obj[indivial_i, :] = [ 8. 5. 41. 46.]
321 cord_individual_obj[indivial_i, :] = [ 9. 4. 38. 42.]
322 cord_individual_obj[indivial_i, :] = [10. 4. 26. 30.]
323 cord_individual_obj[indivial_i, :] = [11. 3. 9. 12.]
324 cord_individual_obj[indivial_i, :] = [12. 4. 54. 58.]
325 cord_individual_obj[indivial_i, :] = [13. 5. 104. 109.]
326 cord_individual_obj[indivial_i, :] = [14. 5. 47. 52.]
327 cord_individual_obj[indivial_i, :] = [15. 3. 39. 42.]
328 cord_individual_obj[indivial_i, :] = [16. 5. 42. 47.]
329 cord_individual_obj[indivial_i, :] = [17. 5. 43. 48.]
330 cord_individual_obj[indivial_i, :] = [18. 4. 26. 30.]
331 cord_individual_obj[indivial_i, :] = [19. 6. 66. 72.]

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unknown

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332 cord_individual_obj[indivial_i, :] = [20. 4. 64. 68.]  
333 cord_individual_obj[indivial_i, :] = [21. 5. 8. 13.]  
334 cord_individual_obj[indivial_i, :] = [22. 5. 33. 38.]  
335 cord_individual_obj[indivial_i, :] = [23. 5. 8. 13.]  
336 cord_individual_obj[indivial_i, :] = [24. 4. 66. 70.]  
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. 3. 9. 12.]  
344 cord_individual_obj[indivial_i, :] = [ 1. 6. 9. 15.]  
345 cord_individual_obj[indivial_i, :] = [ 2. 5. 22. 27.]  
346 cord_individual_obj[indivial_i, :] = [ 3. 3. 12. 15.]  
347 cord_individual_obj[indivial_i, :] = [ 4. 3. 30. 33.]  
348 cord_individual_obj[indivial_i, :] = [ 5. 5. 73. 78.]  
349 cord_individual_obj[indivial_i, :] = [ 6. 5. 58. 63.]  
350 cord_individual_obj[indivial_i, :] = [ 7. 4. 70. 74.]  
351 cord_individual_obj[indivial_i, :] = [ 8. 5. 18. 23.]  
352 cord_individual_obj[indivial_i, :] = [ 9. 3. 10. 13.]  
353 cord_individual_obj[indivial_i, :] = [10. 5. 54. 59.]  
354 cord_individual_obj[indivial_i, :] = [11. 5. 51. 56.]  
355 cord_individual_obj[indivial_i, :] = [12. 6. 34. 40.]  
356 cord_individual_obj[indivial_i, :] = [13. 6. 21. 27.]  
357 cord_individual_obj[indivial_i, :] = [14. 3. 30. 33.]  
358 cord_individual_obj[indivial_i, :] = [15. 4. 48. 52.]  
359 cord_individual_obj[indivial_i, :] = [16. 3. 6. 9.]  
360 cord_individual_obj[indivial_i, :] = [17. 3. 79. 82.]  
361 cord_individual_obj[indivial_i, :] = [18. 5. 91. 96.]  
362 cord_individual_obj[indivial_i, :] = [19. 5. 70. 75.]  
363 cord_individual_obj[indivial_i, :] = [20. 5. 48. 53.]  
364 cord_individual_obj[indivial_i, :] = [21. 4. 22. 26.]  
365 cord_individual_obj[indivial_i, :] = [22. 5. 54. 59.]  
366 cord_individual_obj[indivial_i, :] = [23. 4. 72. 76.]  
367 cord_individual_obj[indivial_i, :] = [24. 6. 35. 41.]  
368  
369 min(cord_individual_obj[:, 3]) = 9.0  
370 histol_G_best_iter[iter, 3] = 9.0  
371 Begin iteration:  
372  
373 iter = 11  
374 cord_individual_obj[indivial_i, :] = [ 0. 4. 36. 40.]  
375 cord_individual_obj[indivial_i, :] = [ 1. 6. 19. 25.]  
376 cord_individual_obj[indivial_i, :] = [ 2. 5. 62. 67.]  
377 cord_individual_obj[indivial_i, :] = [ 3. 5. 23. 28.]  
378 cord_individual_obj[indivial_i, :] = [ 4. 5. 39. 44.]  
379 cord_individual_obj[indivial_i, :] = [ 5. 6. 27. 33.]  
380 cord_individual_obj[indivial_i, :] = [ 6. 5. 33. 38.]  
381 cord_individual_obj[indivial_i, :] = [ 7. 6. 19. 25.]  
382 cord_individual_obj[indivial_i, :] = [ 8. 7. 14. 21.]  
383 cord_individual_obj[indivial_i, :] = [ 9. 4. 52. 56.]  
384 cord_individual_obj[indivial_i, :] = [10. 5. 35. 40.]  
385 cord_individual_obj[indivial_i, :] = [11. 6. 53. 59.]  
386 cord_individual_obj[indivial_i, :] = [12. 6. 39. 45.]  
387 cord_individual_obj[indivial_i, :] = [13. 3. 45. 48.]  
388 cord_individual_obj[indivial_i, :] = [14. 4. 92. 96.]  
389 cord_individual_obj[indivial_i, :] = [15. 5. 11. 16.]  
390 cord_individual_obj[indivial_i, :] = [16. 3. 46. 49.]  
391 cord_individual_obj[indivial_i, :] = [17. 4. 14. 18.]  
392 cord_individual_obj[indivial_i, :] = [18. 3. 6. 9.]  
393 cord_individual_obj[indivial_i, :] = [19. 6. 25. 31.]  
394 cord_individual_obj[indivial_i, :] = [20. 6. 84. 90.]  
395 cord_individual_obj[indivial_i, :] = [21. 4. 12. 16.]  
396 cord_individual_obj[indivial_i, :] = [22. 5. 14. 19.]  
397 cord_individual_obj[indivial_i, :] = [23. 5. 55. 60.]  
398 cord_individual_obj[indivial_i, :] = [24. 5. 32. 37.]  
399  
400 min(cord_individual_obj[:, 3]) = 9.0  
401 histol_G_best_iter[iter, 3] = 9.0  
402 Begin iteration:  
403  
404 iter = 12  
405 cord_individual_obj[indivial_i, :] = [ 0. 4. 12. 16.]  
406 cord_individual_obj[indivial_i, :] = [ 1. 6. 29. 35.]  
407 cord_individual_obj[indivial_i, :] = [ 2. 5. 69. 74.]  
408 cord_individual_obj[indivial_i, :] = [ 3. 4. 43. 47.]  
409 cord_individual_obj[indivial_i, :] = [ 4. 5. 42. 47.]  
410 cord_individual_obj[indivial_i, :] = [ 5. 5. 38. 43.]  
411 cord_individual_obj[indivial_i, :] = [ 6. 6. 27. 33.]  
412 cord_individual_obj[indivial_i, :] = [ 7. 5. 52. 57.]  
413 cord_individual_obj[indivial_i, :] = [ 8. 4. 46. 50.]  
414 cord_individual_obj[indivial_i, :] = [ 9. 4. 33. 37.]  
415 cord_individual_obj[indivial_i, :] = [10. 4. 6. 10.]
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416 cord_individual_obj[indivial_i,:] = [11. 5. 65. 70.]
417 cord_individual_obj[indivial_i,:] = [12. 5. 49. 54.]
418 cord_individual_obj[indivial_i,:] = [13. 3. 44. 47.]
419 cord_individual_obj[indivial_i,:] = [14. 3. 6. 9.]
420 cord_individual_obj[indivial_i,:] = [15. 4. 12. 16.]
421 cord_individual_obj[indivial_i,:] = [16. 4. 78. 82.]
422 cord_individual_obj[indivial_i,:] = [17. 5. 15. 20.]
423 cord_individual_obj[indivial_i,:] = [18. 4. 82. 86.]
424 cord_individual_obj[indivial_i,:] = [19. 3. 54. 57.]
425 cord_individual_obj[indivial_i,:] = [20. 5. 33. 38.]
426 cord_individual_obj[indivial_i,:] = [21. 5. 28. 33.]
427 cord_individual_obj[indivial_i,:] = [22. 5. 31. 36.]
428 cord_individual_obj[indivial_i,:] = [23. 4. 31. 35.]
429 cord_individual_obj[indivial_i,:] = [24. 6. 56. 62.]
430
431 min(cord_individual_obj[:,3]) = 9.0
432 histol_G_best_iter[iter,3] = 9.0
433 Begin iteration:
434
435 iter = 13
436 cord_individual_obj[indivial_i,:] = [ 0. 5. 66. 71.]
437 cord_individual_obj[indivial_i,:] = [ 1. 5. 60. 65.]
438 cord_individual_obj[indivial_i,:] = [ 2. 4. 72. 76.]
439 cord_individual_obj[indivial_i,:] = [ 3. 5. 53. 58.]
440 cord_individual_obj[indivial_i,:] = [ 4. 5. 54. 59.]
441 cord_individual_obj[indivial_i,:] = [ 5. 4. 53. 57.]
442 cord_individual_obj[indivial_i,:] = [ 6. 4. 71. 75.]
443 cord_individual_obj[indivial_i,:] = [ 7. 5. 54. 59.]
444 cord_individual_obj[indivial_i,:] = [ 8. 4. 65. 69.]
445 cord_individual_obj[indivial_i,:] = [ 9. 4. 73. 77.]
446 cord_individual_obj[indivial_i,:] = [10. 5. 55. 60.]
447 cord_individual_obj[indivial_i,:] = [11. 5. 36. 41.]
448 cord_individual_obj[indivial_i,:] = [12. 5. 106. 111.]
449 cord_individual_obj[indivial_i,:] = [13. 4. 69. 73.]
450 cord_individual_obj[indivial_i,:] = [14. 4. 46. 50.]
451 cord_individual_obj[indivial_i,:] = [15. 5. 42. 47.]
452 cord_individual_obj[indivial_i,:] = [16. 4. 62. 66.]
453 cord_individual_obj[indivial_i,:] = [17. 5. 72. 77.]
454 cord_individual_obj[indivial_i,:] = [18. 3. 6. 9.]
455 cord_individual_obj[indivial_i,:] = [19. 5. 41. 46.]
456 cord_individual_obj[indivial_i,:] = [20. 7. 48. 55.]
457 cord_individual_obj[indivial_i,:] = [21. 4. 74. 78.]
458 cord_individual_obj[indivial_i,:] = [22. 4. 17. 21.]
459 cord_individual_obj[indivial_i,:] = [23. 5. 68. 73.]
460 cord_individual_obj[indivial_i,:] = [24. 4. 59. 63.]
461
462 min(cord_individual_obj[:,3]) = 9.0
463 histol_G_best_iter[iter,3] = 9.0
464 Begin iteration:
465
466 iter = 14
467 cord_individual_obj[indivial_i,:] = [ 0. 4. 7. 11.]
468 cord_individual_obj[indivial_i,:] = [ 1. 7. 10. 17.]
469 cord_individual_obj[indivial_i,:] = [ 2. 3. 98. 101.]
470 cord_individual_obj[indivial_i,:] = [ 3. 4. 7. 11.]
471 cord_individual_obj[indivial_i,:] = [ 4. 4. 7. 11.]
472 cord_individual_obj[indivial_i,:] = [ 5. 5. 7. 12.]
473 cord_individual_obj[indivial_i,:] = [ 6. 4. 14. 18.]
474 cord_individual_obj[indivial_i,:] = [ 7. 4. 6. 10.]
475 cord_individual_obj[indivial_i,:] = [ 8. 6. 8. 14.]
476 cord_individual_obj[indivial_i,:] = [ 9. 3. 30. 33.]
477 cord_individual_obj[indivial_i,:] = [10. 3. 21. 24.]
478 cord_individual_obj[indivial_i,:] = [11. 4. 46. 50.]
479 cord_individual_obj[indivial_i,:] = [12. 3. 6. 9.]
480 cord_individual_obj[indivial_i,:] = [13. 5. 34. 39.]
481 cord_individual_obj[indivial_i,:] = [14. 4. 74. 78.]
482 cord_individual_obj[indivial_i,:] = [15. 4. 7. 11.]
483 cord_individual_obj[indivial_i,:] = [16. 5. 48. 53.]
484 cord_individual_obj[indivial_i,:] = [17. 5. 7. 12.]
485 cord_individual_obj[indivial_i,:] = [18. 4. 82. 86.]
486 cord_individual_obj[indivial_i,:] = [19. 5. 18. 23.]
487 cord_individual_obj[indivial_i,:] = [20. 6. 7. 13.]
488 cord_individual_obj[indivial_i,:] = [21. 6. 9. 15.]
489 cord_individual_obj[indivial_i,:] = [22. 5. 38. 43.]
490 cord_individual_obj[indivial_i,:] = [23. 4. 7. 11.]
491 cord_individual_obj[indivial_i,:] = [24. 4. 13. 17.]
492
493 min(cord_individual_obj[:,3]) = 9.0
494 histol_G_best_iter[iter,3] = 9.0
495 Begin iteration:
496
497 iter = 15
498 cord_individual_obj[indivial_i,:] = [ 0. 5. 74. 79.]
499 cord_individual_obj[indivial_i,:] = [ 1. 4. 17. 21.]

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500 cord_individual_obj[indivial_i,:] = [2. 3. 6. 9.]
501 cord_individual_obj[indivial_i,:] = [3. 5. 45. 50.]
502 cord_individual_obj[indivial_i,:] = [4. 4. 17. 21.]
503 cord_individual_obj[indivial_i,:] = [5. 5. 49. 54.]
504 cord_individual_obj[indivial_i,:] = [6. 4. 20. 24.]
505 cord_individual_obj[indivial_i,:] = [7. 7. 67. 74.]
506 cord_individual_obj[indivial_i,:] = [8. 4. 35. 39.]
507 cord_individual_obj[indivial_i,:] = [9. 3. 50. 53.]
508 cord_individual_obj[indivial_i,:] = [10. 5. 38. 43.]
509 cord_individual_obj[indivial_i,:] = [11. 5. 71. 76.]
510 cord_individual_obj[indivial_i,:] = [12. 5. 54. 59.]
511 cord_individual_obj[indivial_i,:] = [13. 4. 62. 66.]
512 cord_individual_obj[indivial_i,:] = [14. 4. 46. 50.]
513 cord_individual_obj[indivial_i,:] = [15. 5. 14. 19.]
514 cord_individual_obj[indivial_i,:] = [16. 4. 51. 55.]
515 cord_individual_obj[indivial_i,:] = [17. 4. 58. 62.]
516 cord_individual_obj[indivial_i,:] = [18. 5. 41. 46.]
517 cord_individual_obj[indivial_i,:] = [19. 4. 101. 105.]
518 cord_individual_obj[indivial_i,:] = [20. 6. 33. 39.]
519 cord_individual_obj[indivial_i,:] = [21. 4. 22. 26.]
520 cord_individual_obj[indivial_i,:] = [22. 4. 35. 39.]
521 cord_individual_obj[indivial_i,:] = [23. 5. 65. 70.]
522 cord_individual_obj[indivial_i,:] = [24. 5. 39. 44.]
523
524 min(cord_individual_obj[:, 3]) = 9.0
525 histol_G_best_iter[iter, 3] = 9.0
526 Begin iteration:
527
528 iter = 16
529 cord_individual_obj[indivial_i,:] = [0. 5. 67. 72.]
530 cord_individual_obj[indivial_i,:] = [1. 6. 34. 40.]
531 cord_individual_obj[indivial_i,:] = [2. 4. 73. 77.]
532 cord_individual_obj[indivial_i,:] = [3. 5. 56. 61.]
533 cord_individual_obj[indivial_i,:] = [4. 5. 59. 64.]
534 cord_individual_obj[indivial_i,:] = [5. 4. 24. 28.]
535 cord_individual_obj[indivial_i,:] = [6. 5. 30. 35.]
536 cord_individual_obj[indivial_i,:] = [7. 4. 19. 23.]
537 cord_individual_obj[indivial_i,:] = [8. 4. 40. 44.]
538 cord_individual_obj[indivial_i,:] = [9. 3. 62. 65.]
539 cord_individual_obj[indivial_i,:] = [10. 4. 39. 43.]
540 cord_individual_obj[indivial_i,:] = [11. 4. 81. 85.]
541 cord_individual_obj[indivial_i,:] = [12. 5. 54. 59.]
542 cord_individual_obj[indivial_i,:] = [13. 4. 73. 77.]
543 cord_individual_obj[indivial_i,:] = [14. 4. 46. 50.]
544 cord_individual_obj[indivial_i,:] = [15. 5. 19. 24.]
545 cord_individual_obj[indivial_i,:] = [16. 3. 46. 49.]
546 cord_individual_obj[indivial_i,:] = [17. 5. 62. 67.]
547 cord_individual_obj[indivial_i,:] = [18. 4. 56. 60.]
548 cord_individual_obj[indivial_i,:] = [19. 3. 6. 9.]
549 cord_individual_obj[indivial_i,:] = [20. 7. 59. 66.]
550 cord_individual_obj[indivial_i,:] = [21. 4. 37. 41.]
551 cord_individual_obj[indivial_i,:] = [22. 6. 22. 28.]
552 cord_individual_obj[indivial_i,:] = [23. 5. 65. 70.]
553 cord_individual_obj[indivial_i,:] = [24. 5. 41. 46.]
554
555 min(cord_individual_obj[:, 3]) = 9.0
556 histol_G_best_iter[iter, 3] = 9.0
557 Begin iteration:
558
559 iter = 17
560 cord_individual_obj[indivial_i,:] = [0. 4. 86. 90.]
561 cord_individual_obj[indivial_i,:] = [1. 5. 36. 41.]
562 cord_individual_obj[indivial_i,:] = [2. 4. 103. 107.]
563 cord_individual_obj[indivial_i,:] = [3. 5. 38. 43.]
564 cord_individual_obj[indivial_i,:] = [4. 4. 56. 60.]
565 cord_individual_obj[indivial_i,:] = [5. 5. 63. 68.]
566 cord_individual_obj[indivial_i,:] = [6. 4. 28. 32.]
567 cord_individual_obj[indivial_i,:] = [7. 4. 65. 69.]
568 cord_individual_obj[indivial_i,:] = [8. 6. 58. 64.]
569 cord_individual_obj[indivial_i,:] = [9. 4. 40. 44.]
570 cord_individual_obj[indivial_i,:] = [10. 5. 66. 71.]
571 cord_individual_obj[indivial_i,:] = [11. 3. 6. 9.]
572 cord_individual_obj[indivial_i,:] = [12. 5. 67. 72.]
573 cord_individual_obj[indivial_i,:] = [13. 3. 37. 40.]
574 cord_individual_obj[indivial_i,:] = [14. 4. 60. 64.]
575 cord_individual_obj[indivial_i,:] = [15. 5. 26. 31.]
576 cord_individual_obj[indivial_i,:] = [16. 6. 23. 29.]
577 cord_individual_obj[indivial_i,:] = [17. 5. 8. 13.]
578 cord_individual_obj[indivial_i,:] = [18. 6. 35. 41.]
579 cord_individual_obj[indivial_i,:] = [19. 4. 116. 120.]
580 cord_individual_obj[indivial_i,:] = [20. 4. 47. 51.]
581 cord_individual_obj[indivial_i,:] = [21. 7. 23. 30.]
582 cord_individual_obj[indivial_i,:] = [22. 5. 16. 21.]
583 cord_individual_obj[indivial_i,:] = [23. 4. 31. 35.]

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unknown

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584     cord_individual_obj[indivial_i, :] = [24. 4. 71. 75.]  
585  
586     min(cord_individual_obj[:, 3]) = 9.0  
587     historl_G_best_iter[iter, 3] = 9.0  
588 Begin iteration:  
589  
590 iter = 18  
591     cord_individual_obj[indivial_i, :] = [ 0. 4. 63. 67.]  
592     cord_individual_obj[indivial_i, :] = [ 1. 5. 31. 36.]  
593     cord_individual_obj[indivial_i, :] = [ 2. 4. 70. 74.]  
594     cord_individual_obj[indivial_i, :] = [ 3. 4. 28. 32.]  
595     cord_individual_obj[indivial_i, :] = [ 4. 3. 37. 40.]  
596     cord_individual_obj[indivial_i, :] = [ 5. 5. 50. 55.]  
597     cord_individual_obj[indivial_i, :] = [ 6. 7. 58. 65.]  
598     cord_individual_obj[indivial_i, :] = [ 7. 3. 36. 39.]  
599     cord_individual_obj[indivial_i, :] = [ 8. 5. 7. 12.]  
600     cord_individual_obj[indivial_i, :] = [ 9. 3. 37. 40.]  
601     cord_individual_obj[indivial_i, :] = [10. 3. 22. 25.]  
602     cord_individual_obj[indivial_i, :] = [11. 5. 97. 102.]  
603     cord_individual_obj[indivial_i, :] = [12. 4. 63. 67.]  
604     cord_individual_obj[indivial_i, :] = [13. 3. 92. 95.]  
605     cord_individual_obj[indivial_i, :] = [14. 3. 65. 68.]  
606     cord_individual_obj[indivial_i, :] = [15. 5. 23. 28.]  
607     cord_individual_obj[indivial_i, :] = [16. 4. 33. 37.]  
608     cord_individual_obj[indivial_i, :] = [17. 4. 25. 29.]  
609     cord_individual_obj[indivial_i, :] = [18. 4. 35. 39.]  
610     cord_individual_obj[indivial_i, :] = [19. 3. 6. 9.]  
611     cord_individual_obj[indivial_i, :] = [20. 5. 56. 61.]  
612     cord_individual_obj[indivial_i, :] = [21. 6. 7. 13.]  
613     cord_individual_obj[indivial_i, :] = [22. 3. 24. 27.]  
614     cord_individual_obj[indivial_i, :] = [23. 4. 69. 73.]  
615     cord_individual_obj[indivial_i, :] = [24. 6. 43. 49.]  
616  
617     min(cord_individual_obj[:, 3]) = 9.0  
618     historl_G_best_iter[iter, 3] = 9.0  
619 Begin iteration:  
620  
621 iter = 19  
622     cord_individual_obj[indivial_i, :] = [ 0. 4. 86. 90.]  
623     cord_individual_obj[indivial_i, :] = [ 1. 6. 45. 51.]  
624     cord_individual_obj[indivial_i, :] = [ 2. 4. 72. 76.]  
625     cord_individual_obj[indivial_i, :] = [ 3. 5. 83. 88.]  
626     cord_individual_obj[indivial_i, :] = [ 4. 4. 58. 62.]  
627     cord_individual_obj[indivial_i, :] = [ 5. 6. 106. 112.]  
628     cord_individual_obj[indivial_i, :] = [ 6. 4. 90. 94.]  
629     cord_individual_obj[indivial_i, :] = [ 7. 4. 27. 31.]  
630     cord_individual_obj[indivial_i, :] = [ 8. 5. 50. 55.]  
631     cord_individual_obj[indivial_i, :] = [ 9. 4. 73. 77.]  
632     cord_individual_obj[indivial_i, :] = [10. 5. 61. 66.]  
633     cord_individual_obj[indivial_i, :] = [11. 3. 6. 9.]  
634     cord_individual_obj[indivial_i, :] = [12. 5. 56. 61.]  
635     cord_individual_obj[indivial_i, :] = [13. 4. 71. 75.]  
636     cord_individual_obj[indivial_i, :] = [14. 4. 37. 41.]  
637     cord_individual_obj[indivial_i, :] = [15. 5. 27. 32.]  
638     cord_individual_obj[indivial_i, :] = [16. 3. 34. 37.]  
639     cord_individual_obj[indivial_i, :] = [17. 3. 51. 54.]  
640     cord_individual_obj[indivial_i, :] = [18. 5. 39. 44.]  
641     cord_individual_obj[indivial_i, :] = [19. 4. 116. 120.]  
642     cord_individual_obj[indivial_i, :] = [20. 4. 25. 29.]  
643     cord_individual_obj[indivial_i, :] = [21. 6. 66. 72.]  
644     cord_individual_obj[indivial_i, :] = [22. 4. 35. 39.]  
645     cord_individual_obj[indivial_i, :] = [23. 5. 54. 59.]  
646     cord_individual_obj[indivial_i, :] = [24. 4. 77. 81.]  
647  
648     min(cord_individual_obj[:, 3]) = 9.0  
649     historl_G_best_iter[iter, 3] = 9.0  
650 Begin iteration:  
651  
652 iter = 20  
653     cord_individual_obj[indivial_i, :] = [ 0. 5. 74. 79.]  
654     cord_individual_obj[indivial_i, :] = [ 1. 4. 17. 21.]  
655     cord_individual_obj[indivial_i, :] = [ 2. 4. 73. 77.]  
656     cord_individual_obj[indivial_i, :] = [ 3. 5. 21. 26.]  
657     cord_individual_obj[indivial_i, :] = [ 4. 5. 41. 46.]  
658     cord_individual_obj[indivial_i, :] = [ 5. 4. 47. 51.]  
659     cord_individual_obj[indivial_i, :] = [ 6. 5. 19. 24.]  
660     cord_individual_obj[indivial_i, :] = [ 7. 5. 17. 22.]  
661     cord_individual_obj[indivial_i, :] = [ 8. 4. 35. 39.]  
662     cord_individual_obj[indivial_i, :] = [ 9. 3. 50. 53.]  
663     cord_individual_obj[indivial_i, :] = [10. 4. 37. 41.]  
664     cord_individual_obj[indivial_i, :] = [11. 3. 36. 39.]  
665     cord_individual_obj[indivial_i, :] = [12. 5. 28. 33.]  
666     cord_individual_obj[indivial_i, :] = [13. 4. 52. 56.]  
667     cord_individual_obj[indivial_i, :] = [14. 4. 46. 50.]
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668 cord_individual_obj[indivial_i,:] = [15. 5. 14. 19.]
669 cord_individual_obj[indivial_i,:] = [16. 5. 38. 43.]
670 cord_individual_obj[indivial_i,:] = [17. 4. 22. 26.]
671 cord_individual_obj[indivial_i,:] = [18. 5. 41. 46.]
672 cord_individual_obj[indivial_i,:] = [19. 3. 6. 9.]
673 cord_individual_obj[indivial_i,:] = [20. 4. 17. 21.]
674 cord_individual_obj[indivial_i,:] = [21. 4. 17. 21.]
675 cord_individual_obj[indivial_i,:] = [22. 4. 35. 39.]
676 cord_individual_obj[indivial_i,:] = [23. 5. 32. 37.]
677 cord_individual_obj[indivial_i,:] = [24. 5. 46. 51.]
678
679 min(cord_individual_obj[:, 3]) = 9.0
680 historl_G_best_iter[iter, 3] = 9.0
681 Iteration calculate over
682
683
684
685
686 All item are in Bin and:
687 Bin area = 1080
688 Real_area = 113.0
689 Proportion_of_area = 0.10462962962962963
690 BEST_CHROM =
691     berth: [11.5 15. 16.5 20.5 4.5 8. 3. 23.5]
692     time: [0. 1. 0. 3. 2. 0. 0. 0.]
693     num_QC: [3. 3. 4. 4. 5. 2. 5. 3.]
694 Objective function values and some other indicators:
695 Obj0 = 3.00          Obj1 = 6.00          Obj0 + Obj1 = 9.00
696 Total movement of crane: 0.00
697 Total waiting time in berth position: 6.00
698 Total index of q during berthing: 463.00
699 Specific arrangement for each vessel:
700
    V_id: 0           li: 3.0           xi: 11.5           bow of i: 10.0           tail of i: 13.0           gama_i0: 0.0           gama_i1: 2
    .0             gama_i1 + 1: 3.0       gama_i1 - gama_i0: 2.0           duration_time_i: 3.0           demand_i: 140.0           work
701 load_i: 140.0
    V_id: 1           li: 4.0           xi: 15.0           bow of i: 13.0           tail of i: 17.0           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: 100.0           work
    load_i: 100.0
    work load gap_i: 0
    V_id: 2           li: 7.0           xi: 16.5           bow of i: 13.0           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
    load_i: 80.0
    work load gap_i: 0
    V_id: 3           li: 7.0           xi: 20.5           bow of i: 17.0           tail of i: 24.0           gama_i0: 3.0           gama_i1: 3
    .0             gama_i1 + 1: 4.0       gama_i1 - gama_i0: 0.0           duration_time_i: 1.0           demand_i: 80.0           work
    load_i: 80.0
    work load gap_i: 0
    V_id: 4           li: 9.0           xi: 4.5            bow of i: 0.0           tail of i: 9.0           gama_i0: 2.0           gama_i1: 3.0
    .0             gama_i1 + 1: 4.0       gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 140.0           work load_i:
    140.0
    work load gap_i: 0
    V_id: 5           li: 4.0           xi: 8.0            bow of i: 6.0           tail of i: 10.0           gama_i0: 0.0           gama_i1: 1.0
    .0             gama_i1 + 1: 2.0       gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 60.0           work load_i:
    60.0
    work load gap_i: 0
    V_id: 6           li: 6.0           xi: 3.0            bow of i: 0.0           tail of i: 6.0           gama_i0: 0.0           gama_i1: 0.0
    .0             gama_i1 + 1: 1.0       gama_i1 - gama_i0: 0.0           duration_time_i: 1.0           demand_i: 100.0           work load_i:
    100.0
    work load gap_i: 0
    V_id: 7           li: 7.0           xi: 23.5           bow of i: 20.0           tail of i: 27.0           gama_i0: 0.0           gama_i1: 2
    .0             gama_i1 + 1: 3.0       gama_i1 - gama_i0: 2.0           duration_time_i: 3.0           demand_i: 140.0           work
    load_i: 140.0
    work load gap_i: 0
708
709 Algorithm finished and the total CPU time: 238 s
710 End
711

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