

unknown

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80 cord_individual_obj[indivial_i,:] = [ 16.  6. 107. 113.]
81 cord_individual_obj[indivial_i,:] = [ 17.  7. 126. 133.]
82 cord_individual_obj[indivial_i,:] = [ 18.  7. 105. 112.]
83 cord_individual_obj[indivial_i,:] = [19.  6. 87. 93.]
84 cord_individual_obj[indivial_i,:] = [20.  6. 90. 96.]
85 cord_individual_obj[indivial_i,:] = [21.  7. 112. 119.]
86 cord_individual_obj[indivial_i,:] = [22.  5. 93. 98.]
87 cord_individual_obj[indivial_i,:] = [23.  8. 100. 108.]
88 cord_individual_obj[indivial_i,:] = [24.  8. 101. 109.]
89
90 min(cord_individual_obj[:,3]) = 47.0
91 historl_G_best_iter[iter, 3] = 47.0
92 Begin iteration:
93
94 iter = 2
95 cord_individual_obj[indivial_i,:] = [ 0.  8. 103. 111.]
96 cord_individual_obj[indivial_i,:] = [ 1.  7. 61. 68.]
97 cord_individual_obj[indivial_i,:] = [ 2.  8. 88. 96.]
98 cord_individual_obj[indivial_i,:] = [ 3. 12. 71. 83.]
99 cord_individual_obj[indivial_i,:] = [ 4.  7. 83. 90.]
100 cord_individual_obj[indivial_i,:] = [ 5.  6. 41. 47.]
101 cord_individual_obj[indivial_i,:] = [ 6.  7. 87. 94.]
102 cord_individual_obj[indivial_i,:] = [ 7.  8. 104. 112.]
103 cord_individual_obj[indivial_i,:] = [ 8.  6. 80. 86.]
104 cord_individual_obj[indivial_i,:] = [ 9.  8. 129. 137.]
105 cord_individual_obj[indivial_i,:] = [10.  8. 117. 125.]
106 cord_individual_obj[indivial_i,:] = [11.  6. 53. 59.]
107 cord_individual_obj[indivial_i,:] = [12.  7. 100. 107.]
108 cord_individual_obj[indivial_i,:] = [13.  7. 96. 103.]
109 cord_individual_obj[indivial_i,:] = [14.  7. 52. 59.]
110 cord_individual_obj[indivial_i,:] = [15.  9. 116. 125.]
111 cord_individual_obj[indivial_i,:] = [16.  6. 54. 60.]
112 cord_individual_obj[indivial_i,:] = [17.  7. 93. 100.]
113 cord_individual_obj[indivial_i,:] = [18.  7. 60. 67.]
114 cord_individual_obj[indivial_i,:] = [19.  8. 54. 62.]
115 cord_individual_obj[indivial_i,:] = [20.  9. 71. 80.]
116 cord_individual_obj[indivial_i,:] = [21.  7. 61. 68.]
117 cord_individual_obj[indivial_i,:] = [22.  6. 135. 141.]
118 cord_individual_obj[indivial_i,:] = [23.  8. 108. 116.]
119 cord_individual_obj[indivial_i,:] = [24.  6. 111. 117.]
120
121 min(cord_individual_obj[:,3]) = 47.0
122 historl_G_best_iter[iter, 3] = 47.0
123 Begin iteration:
124
125 iter = 3
126 cord_individual_obj[indivial_i,:] = [ 0.  6. 108. 114.]
127 cord_individual_obj[indivial_i,:] = [ 1.  8. 67. 75.]
128 cord_individual_obj[indivial_i,:] = [ 2.  9. 126. 135.]
129 cord_individual_obj[indivial_i,:] = [ 3.  7. 45. 52.]
130 cord_individual_obj[indivial_i,:] = [ 4.  6. 59. 65.]
131 cord_individual_obj[indivial_i,:] = [ 5.  7. 52. 59.]
132 cord_individual_obj[indivial_i,:] = [ 6.  6. 89. 95.]
133 cord_individual_obj[indivial_i,:] = [ 7.  6. 59. 65.]
134 cord_individual_obj[indivial_i,:] = [ 8.  8. 88. 96.]
135 cord_individual_obj[indivial_i,:] = [ 9.  6. 138. 144.]
136 cord_individual_obj[indivial_i,:] = [10.  6. 60. 66.]
137 cord_individual_obj[indivial_i,:] = [11.  7. 36. 43.]
138 cord_individual_obj[indivial_i,:] = [12.  7. 79. 86.]
139 cord_individual_obj[indivial_i,:] = [13.  6. 46. 52.]
140 cord_individual_obj[indivial_i,:] = [14.  9. 64. 73.]
141 cord_individual_obj[indivial_i,:] = [15.  7. 99. 106.]
142 cord_individual_obj[indivial_i,:] = [16.  5. 114. 119.]
143 cord_individual_obj[indivial_i,:] = [17.  7. 50. 57.]
144 cord_individual_obj[indivial_i,:] = [18.  6. 68. 74.]
145 cord_individual_obj[indivial_i,:] = [19.  7. 124. 131.]
146 cord_individual_obj[indivial_i,:] = [20.  6. 82. 88.]
147 cord_individual_obj[indivial_i,:] = [21.  7. 51. 58.]
148 cord_individual_obj[indivial_i,:] = [22.  6. 41. 47.]
149 cord_individual_obj[indivial_i,:] = [23.  6. 38. 44.]
150 cord_individual_obj[indivial_i,:] = [24.  7. 56. 63.]
151
152 min(cord_individual_obj[:,3]) = 43.0
153 historl_G_best_iter[iter, 3] = 43.0
154 Begin iteration:
155
156 iter = 4
157 cord_individual_obj[indivial_i,:] = [ 0.  7. 47. 54.]
158 cord_individual_obj[indivial_i,:] = [ 1.  6. 108. 114.]
159 cord_individual_obj[indivial_i,:] = [ 2.  7. 109. 116.]
160 cord_individual_obj[indivial_i,:] = [ 3.  8. 96. 104.]
161 cord_individual_obj[indivial_i,:] = [ 4.  5. 56. 61.]
162 cord_individual_obj[indivial_i,:] = [ 5.  8. 124. 132.]
163 cord_individual_obj[indivial_i,:] = [ 6.  7. 84. 91.]

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164 cord_individual_obj[indivial_i,:] = [ 7. 7. 98. 105.]
165 cord_individual_obj[indivial_i,:] = [ 8. 10. 40. 50.]
166 cord_individual_obj[indivial_i,:] = [ 9. 7. 36. 43.]
167 cord_individual_obj[indivial_i,:] = [10. 7. 25. 32.]
168 cord_individual_obj[indivial_i,:] = [11. 7. 129. 136.]
169 cord_individual_obj[indivial_i,:] = [12. 6. 75. 81.]
170 cord_individual_obj[indivial_i,:] = [13. 6. 72. 78.]
171 cord_individual_obj[indivial_i,:] = [14. 8. 41. 49.]
172 cord_individual_obj[indivial_i,:] = [15. 7. 49. 56.]
173 cord_individual_obj[indivial_i,:] = [16. 9. 74. 83.]
174 cord_individual_obj[indivial_i,:] = [17. 7. 49. 56.]
175 cord_individual_obj[indivial_i,:] = [18. 6. 104. 110.]
176 cord_individual_obj[indivial_i,:] = [19. 6. 92. 98.]
177 cord_individual_obj[indivial_i,:] = [20. 6. 105. 111.]
178 cord_individual_obj[indivial_i,:] = [21. 7. 85. 92.]
179 cord_individual_obj[indivial_i,:] = [22. 5. 103. 108.]
180 cord_individual_obj[indivial_i,:] = [23. 6. 53. 59.]
181 cord_individual_obj[indivial_i,:] = [24. 7. 58. 65.]
182
183 min(cord_individual_obj[:,3]) = 32.0
184 historl_G_best_iter[iter,3] = 32.0
185 Begin iteration:
186
187 iter = 5
188 cord_individual_obj[indivial_i,:] = [ 0. 8. 84. 92.]
189 cord_individual_obj[indivial_i,:] = [ 1. 7. 77. 84.]
190 cord_individual_obj[indivial_i,:] = [ 2. 9. 106. 115.]
191 cord_individual_obj[indivial_i,:] = [ 3. 7. 123. 130.]
192 cord_individual_obj[indivial_i,:] = [ 4. 7. 56. 63.]
193 cord_individual_obj[indivial_i,:] = [ 5. 8. 143. 151.]
194 cord_individual_obj[indivial_i,:] = [ 6. 8. 91. 99.]
195 cord_individual_obj[indivial_i,:] = [ 7. 7. 60. 67.]
196 cord_individual_obj[indivial_i,:] = [ 8. 5. 135. 140.]
197 cord_individual_obj[indivial_i,:] = [ 9. 7. 83. 90.]
198 cord_individual_obj[indivial_i,:] = [10. 7. 121. 128.]
199 cord_individual_obj[indivial_i,:] = [11. 7. 25. 32.]
200 cord_individual_obj[indivial_i,:] = [12. 8. 100. 108.]
201 cord_individual_obj[indivial_i,:] = [13. 7. 89. 96.]
202 cord_individual_obj[indivial_i,:] = [14. 6. 100. 106.]
203 cord_individual_obj[indivial_i,:] = [15. 7. 130. 137.]
204 cord_individual_obj[indivial_i,:] = [16. 7. 68. 75.]
205 cord_individual_obj[indivial_i,:] = [17. 7. 91. 98.]
206 cord_individual_obj[indivial_i,:] = [18. 8. 90. 98.]
207 cord_individual_obj[indivial_i,:] = [19. 8. 60. 68.]
208 cord_individual_obj[indivial_i,:] = [20. 8. 124. 132.]
209 cord_individual_obj[indivial_i,:] = [21. 6. 44. 50.]
210 cord_individual_obj[indivial_i,:] = [22. 7. 81. 88.]
211 cord_individual_obj[indivial_i,:] = [23. 6. 110. 116.]
212 cord_individual_obj[indivial_i,:] = [24. 7. 119. 126.]
213
214 min(cord_individual_obj[:,3]) = 32.0
215 historl_G_best_iter[iter,3] = 32.0
216 Begin iteration:
217
218 iter = 6
219 cord_individual_obj[indivial_i,:] = [ 0. 7. 135. 142.]
220 cord_individual_obj[indivial_i,:] = [ 1. 8. 157. 165.]
221 cord_individual_obj[indivial_i,:] = [ 2. 6. 70. 76.]
222 cord_individual_obj[indivial_i,:] = [ 3. 7. 133. 140.]
223 cord_individual_obj[indivial_i,:] = [ 4. 6. 115. 121.]
224 cord_individual_obj[indivial_i,:] = [ 5. 7. 25. 32.]
225 cord_individual_obj[indivial_i,:] = [ 6. 9. 57. 66.]
226 cord_individual_obj[indivial_i,:] = [ 7. 7. 119. 126.]
227 cord_individual_obj[indivial_i,:] = [ 8. 7. 96. 103.]
228 cord_individual_obj[indivial_i,:] = [ 9. 7. 87. 94.]
229 cord_individual_obj[indivial_i,:] = [10. 6. 102. 108.]
230 cord_individual_obj[indivial_i,:] = [11. 6. 67. 73.]
231 cord_individual_obj[indivial_i,:] = [12. 7. 86. 93.]
232 cord_individual_obj[indivial_i,:] = [13. 6. 128. 134.]
233 cord_individual_obj[indivial_i,:] = [14. 8. 51. 59.]
234 cord_individual_obj[indivial_i,:] = [15. 7. 71. 78.]
235 cord_individual_obj[indivial_i,:] = [16. 7. 50. 57.]
236 cord_individual_obj[indivial_i,:] = [17. 8. 109. 117.]
237 cord_individual_obj[indivial_i,:] = [18. 7. 45. 52.]
238 cord_individual_obj[indivial_i,:] = [19. 6. 126. 132.]
239 cord_individual_obj[indivial_i,:] = [20. 8. 40. 48.]
240 cord_individual_obj[indivial_i,:] = [21. 7. 73. 80.]
241 cord_individual_obj[indivial_i,:] = [22. 7. 102. 109.]
242 cord_individual_obj[indivial_i,:] = [23. 8. 70. 78.]
243 cord_individual_obj[indivial_i,:] = [24. 7. 50. 57.]
244
245 min(cord_individual_obj[:,3]) = 32.0
246 historl_G_best_iter[iter,3] = 32.0
247 Begin iteration:

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248
249 iter = 7
250 cord_individual_obj[indivial_i, :] = [ 0.  5. 70. 75.]
251 cord_individual_obj[indivial_i, :] = [ 1.  7. 25. 32.]
252 cord_individual_obj[indivial_i, :] = [ 2.  7. 47. 54.]
253 cord_individual_obj[indivial_i, :] = [ 3.  8. 81. 89.]
254 cord_individual_obj[indivial_i, :] = [ 4.  6. 66. 72.]
255 cord_individual_obj[indivial_i, :] = [ 5.  6. 137. 143.]
256 cord_individual_obj[indivial_i, :] = [ 6.  8. 72. 80.]
257 cord_individual_obj[indivial_i, :] = [ 7.  6. 49. 55.]
258 cord_individual_obj[indivial_i, :] = [ 8.  8. 62. 70.]
259 cord_individual_obj[indivial_i, :] = [ 9.  6. 123. 129.]
260 cord_individual_obj[indivial_i, :] = [10.  8. 98. 106.]
261 cord_individual_obj[indivial_i, :] = [11.  6. 46. 52.]
262 cord_individual_obj[indivial_i, :] = [12.  7. 95. 102.]
263 cord_individual_obj[indivial_i, :] = [13.  5. 94. 99.]
264 cord_individual_obj[indivial_i, :] = [14.  6. 66. 72.]
265 cord_individual_obj[indivial_i, :] = [15.  7. 61. 68.]
266 cord_individual_obj[indivial_i, :] = [16.  8. 61. 69.]
267 cord_individual_obj[indivial_i, :] = [17.  6. 75. 81.]
268 cord_individual_obj[indivial_i, :] = [18.  7. 42. 49.]
269 cord_individual_obj[indivial_i, :] = [19.  6. 32. 38.]
270 cord_individual_obj[indivial_i, :] = [20.  7. 21. 28.]
271 cord_individual_obj[indivial_i, :] = [21.  6. 65. 71.]
272 cord_individual_obj[indivial_i, :] = [22.  7. 107. 114.]
273 cord_individual_obj[indivial_i, :] = [23.  8. 65. 73.]
274 cord_individual_obj[indivial_i, :] = [24.  7. 50. 57.]
275

276 min(cord_individual_obj[:, 3]) = 28.0
277 historl_G_best_iter[iter, 3] = 28.0
278 Begin iteration:
279
280 iter = 8
281 cord_individual_obj[indivial_i, :] = [ 0.  6. 71. 77.]
282 cord_individual_obj[indivial_i, :] = [ 1.  6. 81. 87.]
283 cord_individual_obj[indivial_i, :] = [ 2.  7. 107. 114.]
284 cord_individual_obj[indivial_i, :] = [ 3.  7. 51. 58.]
285 cord_individual_obj[indivial_i, :] = [ 4.  5. 96. 101.]
286 cord_individual_obj[indivial_i, :] = [ 5.  7. 21. 28.]
287 cord_individual_obj[indivial_i, :] = [ 6.  8. 90. 98.]
288 cord_individual_obj[indivial_i, :] = [ 7.  6. 66. 72.]
289 cord_individual_obj[indivial_i, :] = [ 8.  6. 38. 44.]
290 cord_individual_obj[indivial_i, :] = [ 9.  7. 120. 127.]
291 cord_individual_obj[indivial_i, :] = [10.  8. 55. 63.]
292 cord_individual_obj[indivial_i, :] = [11.  6. 171. 177.]
293 cord_individual_obj[indivial_i, :] = [12.  7. 144. 151.]
294 cord_individual_obj[indivial_i, :] = [13.  5. 132. 137.]
295 cord_individual_obj[indivial_i, :] = [14.  8. 62. 70.]
296 cord_individual_obj[indivial_i, :] = [15.  7. 121. 128.]
297 cord_individual_obj[indivial_i, :] = [16.  8. 48. 56.]
298 cord_individual_obj[indivial_i, :] = [17.  5. 77. 82.]
299 cord_individual_obj[indivial_i, :] = [18.  5. 92. 97.]
300 cord_individual_obj[indivial_i, :] = [19.  9. 112. 121.]
301 cord_individual_obj[indivial_i, :] = [20.  5. 60. 65.]
302 cord_individual_obj[indivial_i, :] = [21.  6. 92. 98.]
303 cord_individual_obj[indivial_i, :] = [22.  7. 92. 99.]
304 cord_individual_obj[indivial_i, :] = [23.  7. 87. 94.]
305 cord_individual_obj[indivial_i, :] = [24.  7. 103. 110.]
306

307 min(cord_individual_obj[:, 3]) = 28.0
308 historl_G_best_iter[iter, 3] = 28.0
309 Begin iteration:
310
311 iter = 9
312 cord_individual_obj[indivial_i, :] = [ 0.  6. 59. 65.]
313 cord_individual_obj[indivial_i, :] = [ 1.  7. 65. 72.]
314 cord_individual_obj[indivial_i, :] = [ 2.  7. 67. 74.]
315 cord_individual_obj[indivial_i, :] = [ 3.  7. 52. 59.]
316 cord_individual_obj[indivial_i, :] = [ 4.  7. 43. 50.]
317 cord_individual_obj[indivial_i, :] = [ 5.  6. 50. 56.]
318 cord_individual_obj[indivial_i, :] = [ 6.  7. 75. 82.]
319 cord_individual_obj[indivial_i, :] = [ 7.  7. 40. 47.]
320 cord_individual_obj[indivial_i, :] = [ 8.  9. 58. 67.]
321 cord_individual_obj[indivial_i, :] = [ 9.  7. 29. 36.]
322 cord_individual_obj[indivial_i, :] = [10.  7. 80. 87.]
323 cord_individual_obj[indivial_i, :] = [11.  7. 21. 28.]
324 cord_individual_obj[indivial_i, :] = [12.  6. 64. 70.]
325 cord_individual_obj[indivial_i, :] = [13.  8. 35. 43.]
326 cord_individual_obj[indivial_i, :] = [14.  6. 53. 59.]
327 cord_individual_obj[indivial_i, :] = [15.  8. 58. 66.]
328 cord_individual_obj[indivial_i, :] = [16.  7. 71. 78.]
329 cord_individual_obj[indivial_i, :] = [17.  7. 53. 60.]
330 cord_individual_obj[indivial_i, :] = [18.  7. 61. 68.]
331 cord_individual_obj[indivial_i, :] = [19.  7. 78. 85.]

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332 cord_individual_obj[indivial_i, :] = [20. 5. 38. 43.]
333 cord_individual_obj[indivial_i, :] = [21. 6. 55. 61.]
334 cord_individual_obj[indivial_i, :] = [22. 7. 88. 95.]
335 cord_individual_obj[indivial_i, :] = [23. 8. 46. 54.]
336 cord_individual_obj[indivial_i, :] = [24. 7. 77. 84.]
337
338 min(cord_individual_obj[:, 3]) = 28.0
339 histol_G_best_iter[iter, 3] = 28.0
340 Begin iteration:
341
342 iter = 10
343 cord_individual_obj[indivial_i, :] = [ 0. 6. 72. 78.]
344 cord_individual_obj[indivial_i, :] = [ 1. 6. 93. 99.]
345 cord_individual_obj[indivial_i, :] = [ 2. 5. 39. 44.]
346 cord_individual_obj[indivial_i, :] = [ 3. 8. 32. 40.]
347 cord_individual_obj[indivial_i, :] = [ 4. 7. 66. 73.]
348 cord_individual_obj[indivial_i, :] = [ 5. 6. 81. 87.]
349 cord_individual_obj[indivial_i, :] = [ 6. 7. 87. 94.]
350 cord_individual_obj[indivial_i, :] = [ 7. 7. 84. 91.]
351 cord_individual_obj[indivial_i, :] = [ 8. 7. 94. 101.]
352 cord_individual_obj[indivial_i, :] = [ 9. 6. 137. 143.]
353 cord_individual_obj[indivial_i, :] = [10. 6. 66. 72.]
354 cord_individual_obj[indivial_i, :] = [11. 6. 63. 69.]
355 cord_individual_obj[indivial_i, :] = [12. 6. 118. 124.]
356 cord_individual_obj[indivial_i, :] = [13. 7. 75. 82.]
357 cord_individual_obj[indivial_i, :] = [14. 7. 46. 53.]
358 cord_individual_obj[indivial_i, :] = [15. 7. 52. 59.]
359 cord_individual_obj[indivial_i, :] = [16. 6. 35. 41.]
360 cord_individual_obj[indivial_i, :] = [17. 5. 64. 69.]
361 cord_individual_obj[indivial_i, :] = [18. 7. 67. 74.]
362 cord_individual_obj[indivial_i, :] = [19. 5. 73. 78.]
363 cord_individual_obj[indivial_i, :] = [20. 7. 121. 128.]
364 cord_individual_obj[indivial_i, :] = [21. 7. 25. 32.]
365 cord_individual_obj[indivial_i, :] = [22. 7. 21. 28.]
366 cord_individual_obj[indivial_i, :] = [23. 7. 40. 47.]
367 cord_individual_obj[indivial_i, :] = [24. 6. 109. 115.]
368
369 min(cord_individual_obj[:, 3]) = 28.0
370 histol_G_best_iter[iter, 3] = 28.0
371 Begin iteration:
372
373 iter = 11
374 cord_individual_obj[indivial_i, :] = [ 0. 8. 149. 157.]
375 cord_individual_obj[indivial_i, :] = [ 1. 7. 81. 88.]
376 cord_individual_obj[indivial_i, :] = [ 2. 6. 56. 62.]
377 cord_individual_obj[indivial_i, :] = [ 3. 7. 74. 81.]
378 cord_individual_obj[indivial_i, :] = [ 4. 8. 43. 51.]
379 cord_individual_obj[indivial_i, :] = [ 5. 8. 39. 47.]
380 cord_individual_obj[indivial_i, :] = [ 6. 6. 86. 92.]
381 cord_individual_obj[indivial_i, :] = [ 7. 7. 84. 91.]
382 cord_individual_obj[indivial_i, :] = [ 8. 7. 73. 80.]
383 cord_individual_obj[indivial_i, :] = [ 9. 7. 21. 28.]
384 cord_individual_obj[indivial_i, :] = [10. 9. 52. 61.]
385 cord_individual_obj[indivial_i, :] = [11. 7. 72. 79.]
386 cord_individual_obj[indivial_i, :] = [12. 5. 46. 51.]
387 cord_individual_obj[indivial_i, :] = [13. 6. 100. 106.]
388 cord_individual_obj[indivial_i, :] = [14. 7. 51. 58.]
389 cord_individual_obj[indivial_i, :] = [15. 9. 48. 57.]
390 cord_individual_obj[indivial_i, :] = [16. 7. 26. 33.]
391 cord_individual_obj[indivial_i, :] = [17. 7. 72. 79.]
392 cord_individual_obj[indivial_i, :] = [18. 5. 157. 162.]
393 cord_individual_obj[indivial_i, :] = [19. 7. 49. 56.]
394 cord_individual_obj[indivial_i, :] = [20. 5. 80. 85.]
395 cord_individual_obj[indivial_i, :] = [21. 8. 42. 50.]
396 cord_individual_obj[indivial_i, :] = [22. 5. 60. 65.]
397 cord_individual_obj[indivial_i, :] = [23. 8. 59. 67.]
398 cord_individual_obj[indivial_i, :] = [24. 7. 128. 135.]
399
400 min(cord_individual_obj[:, 3]) = 28.0
401 histol_G_best_iter[iter, 3] = 28.0
402 Begin iteration:
403
404 iter = 12
405 cord_individual_obj[indivial_i, :] = [ 0. 5. 80. 85.]
406 cord_individual_obj[indivial_i, :] = [ 1. 7. 38. 45.]
407 cord_individual_obj[indivial_i, :] = [ 2. 7. 92. 99.]
408 cord_individual_obj[indivial_i, :] = [ 3. 8. 61. 69.]
409 cord_individual_obj[indivial_i, :] = [ 4. 8. 110. 118.]
410 cord_individual_obj[indivial_i, :] = [ 5. 7. 81. 88.]
411 cord_individual_obj[indivial_i, :] = [ 6. 7. 52. 59.]
412 cord_individual_obj[indivial_i, :] = [ 7. 8. 122. 130.]
413 cord_individual_obj[indivial_i, :] = [ 8. 7. 98. 105.]
414 cord_individual_obj[indivial_i, :] = [ 9. 5. 91. 96.]
415 cord_individual_obj[indivial_i, :] = [10. 7. 132. 139.]

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416 cord_individual_obj[indivial_i,:] = [11. 5. 69. 74.]
417 cord_individual_obj[indivial_i,:] = [12. 5. 94. 99.]
418 cord_individual_obj[indivial_i,:] = [13. 6. 88. 94.]
419 cord_individual_obj[indivial_i,:] = [14. 8. 60. 68.]
420 cord_individual_obj[indivial_i,:] = [15. 8. 90. 98.]
421 cord_individual_obj[indivial_i,:] = [16. 6. 56. 62.]
422 cord_individual_obj[indivial_i,:] = [17. 7. 59. 66.]
423 cord_individual_obj[indivial_i,:] = [18. 7. 21. 28.]
424 cord_individual_obj[indivial_i,:] = [19. 6. 63. 69.]
425 cord_individual_obj[indivial_i,:] = [20. 6. 90. 96.]
426 cord_individual_obj[indivial_i,:] = [21. 6. 72. 78.]
427 cord_individual_obj[indivial_i,:] = [22. 7. 81. 88.]
428 cord_individual_obj[indivial_i,:] = [23. 7. 56. 63.]
429 cord_individual_obj[indivial_i,:] = [24. 7. 80. 87.]
430
431 min(cord_individual_obj[:,3]) = 28.0
432 histol_G_best_iter[iter,3] = 28.0
433 Begin iteration:
434
435 iter = 13
436 cord_individual_obj[indivial_i,:] = [ 0. 6. 38. 44.]
437 cord_individual_obj[indivial_i,:] = [ 1. 7. 70. 77.]
438 cord_individual_obj[indivial_i,:] = [ 2. 7. 104. 111.]
439 cord_individual_obj[indivial_i,:] = [ 3. 6. 45. 51.]
440 cord_individual_obj[indivial_i,:] = [ 4. 7. 85. 92.]
441 cord_individual_obj[indivial_i,:] = [ 5. 5. 71. 76.]
442 cord_individual_obj[indivial_i,:] = [ 6. 6. 94. 100.]
443 cord_individual_obj[indivial_i,:] = [ 7. 8. 45. 53.]
444 cord_individual_obj[indivial_i,:] = [ 8. 8. 41. 49.]
445 cord_individual_obj[indivial_i,:] = [ 9. 5. 96. 101.]
446 cord_individual_obj[indivial_i,:] = [10. 7. 21. 28.]
447 cord_individual_obj[indivial_i,:] = [11. 8. 76. 84.]
448 cord_individual_obj[indivial_i,:] = [12. 6. 32. 38.]
449 cord_individual_obj[indivial_i,:] = [13. 7. 68. 75.]
450 cord_individual_obj[indivial_i,:] = [14. 5. 47. 52.]
451 cord_individual_obj[indivial_i,:] = [15. 8. 59. 67.]
452 cord_individual_obj[indivial_i,:] = [16. 7. 80. 87.]
453 cord_individual_obj[indivial_i,:] = [17. 7. 60. 67.]
454 cord_individual_obj[indivial_i,:] = [18. 6. 64. 70.]
455 cord_individual_obj[indivial_i,:] = [19. 6. 118. 124.]
456 cord_individual_obj[indivial_i,:] = [20. 6. 40. 46.]
457 cord_individual_obj[indivial_i,:] = [21. 6. 50. 56.]
458 cord_individual_obj[indivial_i,:] = [22. 6. 73. 79.]
459 cord_individual_obj[indivial_i,:] = [23. 6. 33. 39.]
460 cord_individual_obj[indivial_i,:] = [24. 7. 43. 50.]
461
462 min(cord_individual_obj[:,3]) = 28.0
463 histol_G_best_iter[iter,3] = 28.0
464 Begin iteration:
465
466 iter = 14
467 cord_individual_obj[indivial_i,:] = [ 0. 6. 84. 90.]
468 cord_individual_obj[indivial_i,:] = [ 1. 6. 117. 123.]
469 cord_individual_obj[indivial_i,:] = [ 2. 8. 45. 53.]
470 cord_individual_obj[indivial_i,:] = [ 3. 9. 51. 60.]
471 cord_individual_obj[indivial_i,:] = [ 4. 7. 72. 79.]
472 cord_individual_obj[indivial_i,:] = [ 5. 5. 49. 54.]
473 cord_individual_obj[indivial_i,:] = [ 6. 6. 41. 47.]
474 cord_individual_obj[indivial_i,:] = [ 7. 6. 54. 60.]
475 cord_individual_obj[indivial_i,:] = [ 8. 8. 37. 45.]
476 cord_individual_obj[indivial_i,:] = [ 9. 5. 97. 102.]
477 cord_individual_obj[indivial_i,:] = [10. 7. 68. 75.]
478 cord_individual_obj[indivial_i,:] = [11. 5. 54. 59.]
479 cord_individual_obj[indivial_i,:] = [12. 6. 60. 66.]
480 cord_individual_obj[indivial_i,:] = [13. 6. 42. 48.]
481 cord_individual_obj[indivial_i,:] = [14. 9. 39. 48.]
482 cord_individual_obj[indivial_i,:] = [15. 7. 30. 37.]
483 cord_individual_obj[indivial_i,:] = [16. 7. 82. 89.]
484 cord_individual_obj[indivial_i,:] = [17. 6. 58. 64.]
485 cord_individual_obj[indivial_i,:] = [18. 6. 64. 70.]
486 cord_individual_obj[indivial_i,:] = [19. 7. 21. 28.]
487 cord_individual_obj[indivial_i,:] = [20. 7. 84. 91.]
488 cord_individual_obj[indivial_i,:] = [21. 6. 39. 45.]
489 cord_individual_obj[indivial_i,:] = [22. 8. 68. 76.]
490 cord_individual_obj[indivial_i,:] = [23. 7. 51. 58.]
491 cord_individual_obj[indivial_i,:] = [24. 7. 59. 66.]
492
493 min(cord_individual_obj[:,3]) = 28.0
494 histol_G_best_iter[iter,3] = 28.0
495 Begin iteration:
496
497 iter = 15
498 cord_individual_obj[indivial_i,:] = [ 0. 7. 95. 102.]
499 cord_individual_obj[indivial_i,:] = [ 1. 7. 21. 28.]

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500 cord_individual_obj[indivial_i,:] = [ 2. 8. 38. 46.]
501 cord_individual_obj[indivial_i,:] = [ 3. 8. 30. 38.]
502 cord_individual_obj[indivial_i,:] = [ 4. 6. 63. 69.]
503 cord_individual_obj[indivial_i,:] = [ 5. 6. 68. 74.]
504 cord_individual_obj[indivial_i,:] = [ 6. 7. 64. 71.]
505 cord_individual_obj[indivial_i,:] = [ 7. 7. 62. 69.]
506 cord_individual_obj[indivial_i,:] = [ 8. 7. 41. 48.]
507 cord_individual_obj[indivial_i,:] = [ 9. 6. 105. 111.]
508 cord_individual_obj[indivial_i,:] = [10. 8. 42. 50.]
509 cord_individual_obj[indivial_i,:] = [11. 7. 35. 42.]
510 cord_individual_obj[indivial_i,:] = [12. 7. 53. 60.]
511 cord_individual_obj[indivial_i,:] = [13. 7. 45. 52.]
512 cord_individual_obj[indivial_i,:] = [14. 7. 66. 73.]
513 cord_individual_obj[indivial_i,:] = [15. 8. 77. 85.]
514 cord_individual_obj[indivial_i,:] = [16. 7. 46. 53.]
515 cord_individual_obj[indivial_i,:] = [17. 7. 57. 64.]
516 cord_individual_obj[indivial_i,:] = [18. 6. 81. 87.]
517 cord_individual_obj[indivial_i,:] = [19. 6. 31. 37.]
518 cord_individual_obj[indivial_i,:] = [20. 7. 74. 81.]
519 cord_individual_obj[indivial_i,:] = [21. 8. 35. 43.]
520 cord_individual_obj[indivial_i,:] = [22. 5. 47. 52.]
521 cord_individual_obj[indivial_i,:] = [23. 7. 49. 56.]
522 cord_individual_obj[indivial_i,:] = [24. 8. 123. 131.]
523
524 min(cord_individual_obj[:, 3]) = 28.0
525 histol_G_best_iter[iter, 3] = 28.0
526 Begin iteration:
527
528 iter = 16
529 cord_individual_obj[indivial_i,:] = [ 0. 6. 37. 43.]
530 cord_individual_obj[indivial_i,:] = [ 1. 6. 54. 60.]
531 cord_individual_obj[indivial_i,:] = [ 2. 7. 36. 43.]
532 cord_individual_obj[indivial_i,:] = [ 3. 7. 60. 67.]
533 cord_individual_obj[indivial_i,:] = [ 4. 7. 64. 71.]
534 cord_individual_obj[indivial_i,:] = [ 5. 5. 67. 72.]
535 cord_individual_obj[indivial_i,:] = [ 6. 6. 64. 70.]
536 cord_individual_obj[indivial_i,:] = [ 7. 8. 66. 74.]
537 cord_individual_obj[indivial_i,:] = [ 8. 9. 31. 40.]
538 cord_individual_obj[indivial_i,:] = [ 9. 5. 118. 123.]
539 cord_individual_obj[indivial_i,:] = [10. 9. 104. 113.]
540 cord_individual_obj[indivial_i,:] = [11. 7. 77. 84.]
541 cord_individual_obj[indivial_i,:] = [12. 6. 54. 60.]
542 cord_individual_obj[indivial_i,:] = [13. 7. 45. 52.]
543 cord_individual_obj[indivial_i,:] = [14. 8. 63. 71.]
544 cord_individual_obj[indivial_i,:] = [15. 9. 74. 83.]
545 cord_individual_obj[indivial_i,:] = [16. 7. 87. 94.]
546 cord_individual_obj[indivial_i,:] = [17. 6. 51. 57.]
547 cord_individual_obj[indivial_i,:] = [18. 5. 79. 84.]
548 cord_individual_obj[indivial_i,:] = [19. 7. 32. 39.]
549 cord_individual_obj[indivial_i,:] = [20. 7. 112. 119.]
550 cord_individual_obj[indivial_i,:] = [21. 8. 44. 52.]
551 cord_individual_obj[indivial_i,:] = [22. 7. 38. 45.]
552 cord_individual_obj[indivial_i,:] = [23. 8. 46. 54.]
553 cord_individual_obj[indivial_i,:] = [24. 7. 21. 28.]
554
555 min(cord_individual_obj[:, 3]) = 28.0
556 histol_G_best_iter[iter, 3] = 28.0
557 Begin iteration:
558
559 iter = 17
560 cord_individual_obj[indivial_i,:] = [ 0. 7. 100. 107.]
561 cord_individual_obj[indivial_i,:] = [ 1. 6. 113. 119.]
562 cord_individual_obj[indivial_i,:] = [ 2. 7. 28. 35.]
563 cord_individual_obj[indivial_i,:] = [ 3. 7. 69. 76.]
564 cord_individual_obj[indivial_i,:] = [ 4. 6. 113. 119.]
565 cord_individual_obj[indivial_i,:] = [ 5. 5. 113. 118.]
566 cord_individual_obj[indivial_i,:] = [ 6. 6. 67. 73.]
567 cord_individual_obj[indivial_i,:] = [ 7. 8. 119. 127.]
568 cord_individual_obj[indivial_i,:] = [ 8. 7. 54. 61.]
569 cord_individual_obj[indivial_i,:] = [ 9. 7. 21. 28.]
570 cord_individual_obj[indivial_i,:] = [10. 9. 49. 58.]
571 cord_individual_obj[indivial_i,:] = [11. 8. 97. 105.]
572 cord_individual_obj[indivial_i,:] = [12. 6. 69. 75.]
573 cord_individual_obj[indivial_i,:] = [13. 5. 77. 82.]
574 cord_individual_obj[indivial_i,:] = [14. 6. 30. 36.]
575 cord_individual_obj[indivial_i,:] = [15. 7. 126. 133.]
576 cord_individual_obj[indivial_i,:] = [16. 6. 34. 40.]
577 cord_individual_obj[indivial_i,:] = [17. 7. 59. 66.]
578 cord_individual_obj[indivial_i,:] = [18. 5. 72. 77.]
579 cord_individual_obj[indivial_i,:] = [19. 7. 31. 38.]
580 cord_individual_obj[indivial_i,:] = [20. 6. 55. 61.]
581 cord_individual_obj[indivial_i,:] = [21. 8. 108. 116.]
582 cord_individual_obj[indivial_i,:] = [22. 8. 44. 52.]
583 cord_individual_obj[indivial_i,:] = [23. 8. 35. 43.]

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unknown

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584     cord_individual_obj[indivial_i, :] = [24. 8. 63. 71.]
585
586     min(cord_individual_obj[:, 3]) = 28.0
587     historl_G_best_iter[iter, 3] = 28.0
588 Begin iteration:
589
590 iter = 18
591     cord_individual_obj[indivial_i, :] = [ 0. 6. 91. 97.]
592     cord_individual_obj[indivial_i, :] = [ 1. 6. 93. 99.]
593     cord_individual_obj[indivial_i, :] = [ 2. 7. 45. 52.]
594     cord_individual_obj[indivial_i, :] = [ 3. 8. 60. 68.]
595     cord_individual_obj[indivial_i, :] = [ 4. 6. 62. 68.]
596     cord_individual_obj[indivial_i, :] = [ 5. 7. 54. 61.]
597     cord_individual_obj[indivial_i, :] = [ 6. 5. 36. 41.]
598     cord_individual_obj[indivial_i, :] = [ 7. 9. 30. 39.]
599     cord_individual_obj[indivial_i, :] = [ 8. 9. 52. 61.]
600     cord_individual_obj[indivial_i, :] = [ 9. 7. 93. 100.]
601     cord_individual_obj[indivial_i, :] = [10. 7. 71. 78.]
602     cord_individual_obj[indivial_i, :] = [11. 7. 105. 112.]
603     cord_individual_obj[indivial_i, :] = [12. 5. 61. 66.]
604     cord_individual_obj[indivial_i, :] = [13. 7. 28. 35.]
605     cord_individual_obj[indivial_i, :] = [14. 8. 39. 47.]
606     cord_individual_obj[indivial_i, :] = [15. 7. 21. 28.]
607     cord_individual_obj[indivial_i, :] = [16. 8. 73. 81.]
608     cord_individual_obj[indivial_i, :] = [17. 5. 42. 47.]
609     cord_individual_obj[indivial_i, :] = [18. 5. 87. 92.]
610     cord_individual_obj[indivial_i, :] = [19. 8. 51. 59.]
611     cord_individual_obj[indivial_i, :] = [20. 6. 78. 84.]
612     cord_individual_obj[indivial_i, :] = [21. 7. 122. 129.]
613     cord_individual_obj[indivial_i, :] = [22. 6. 29. 35.]
614     cord_individual_obj[indivial_i, :] = [23. 7. 44. 51.]
615     cord_individual_obj[indivial_i, :] = [24. 7. 81. 88.]
616
617     min(cord_individual_obj[:, 3]) = 28.0
618     historl_G_best_iter[iter, 3] = 28.0
619 Begin iteration:
620
621 iter = 19
622     cord_individual_obj[indivial_i, :] = [ 0. 7. 55. 62.]
623     cord_individual_obj[indivial_i, :] = [ 1. 6. 63. 69.]
624     cord_individual_obj[indivial_i, :] = [ 2. 7. 34. 41.]
625     cord_individual_obj[indivial_i, :] = [ 3. 7. 55. 62.]
626     cord_individual_obj[indivial_i, :] = [ 4. 6. 58. 64.]
627     cord_individual_obj[indivial_i, :] = [ 5. 6. 52. 58.]
628     cord_individual_obj[indivial_i, :] = [ 6. 5. 64. 69.]
629     cord_individual_obj[indivial_i, :] = [ 7. 9. 41. 50.]
630     cord_individual_obj[indivial_i, :] = [ 8. 7. 54. 61.]
631     cord_individual_obj[indivial_i, :] = [ 9. 7. 48. 55.]
632     cord_individual_obj[indivial_i, :] = [10. 7. 64. 71.]
633     cord_individual_obj[indivial_i, :] = [11. 7. 79. 86.]
634     cord_individual_obj[indivial_i, :] = [12. 6. 68. 74.]
635     cord_individual_obj[indivial_i, :] = [13. 6. 60. 66.]
636     cord_individual_obj[indivial_i, :] = [14. 6. 65. 71.]
637     cord_individual_obj[indivial_i, :] = [15. 7. 30. 37.]
638     cord_individual_obj[indivial_i, :] = [16. 7. 85. 92.]
639     cord_individual_obj[indivial_i, :] = [17. 6. 69. 75.]
640     cord_individual_obj[indivial_i, :] = [18. 6. 43. 49.]
641     cord_individual_obj[indivial_i, :] = [19. 5. 81. 86.]
642     cord_individual_obj[indivial_i, :] = [20. 7. 78. 85.]
643     cord_individual_obj[indivial_i, :] = [21. 7. 21. 28.]
644     cord_individual_obj[indivial_i, :] = [22. 5. 69. 74.]
645     cord_individual_obj[indivial_i, :] = [23. 6. 62. 68.]
646     cord_individual_obj[indivial_i, :] = [24. 6. 61. 67.]
647
648     min(cord_individual_obj[:, 3]) = 28.0
649     historl_G_best_iter[iter, 3] = 28.0
650 Begin iteration:
651
652 iter = 20
653     cord_individual_obj[indivial_i, :] = [ 0. 5. 92. 97.]
654     cord_individual_obj[indivial_i, :] = [ 1. 6. 100. 106.]
655     cord_individual_obj[indivial_i, :] = [ 2. 6. 50. 56.]
656     cord_individual_obj[indivial_i, :] = [ 3. 10. 56. 66.]
657     cord_individual_obj[indivial_i, :] = [ 4. 7. 94. 101.]
658     cord_individual_obj[indivial_i, :] = [ 5. 8. 89. 97.]
659     cord_individual_obj[indivial_i, :] = [ 6. 6. 107. 113.]
660     cord_individual_obj[indivial_i, :] = [ 7. 7. 45. 52.]
661     cord_individual_obj[indivial_i, :] = [ 8. 7. 121. 128.]
662     cord_individual_obj[indivial_i, :] = [ 9. 7. 44. 51.]
663     cord_individual_obj[indivial_i, :] = [10. 7. 60. 67.]
664     cord_individual_obj[indivial_i, :] = [11. 5. 102. 107.]
665     cord_individual_obj[indivial_i, :] = [12. 6. 91. 97.]
666     cord_individual_obj[indivial_i, :] = [13. 5. 114. 119.]
667     cord_individual_obj[indivial_i, :] = [14. 9. 60. 69.]
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668 cord_individual_obj[indivial_i,:] = [15. 7. 90. 97.]
669 cord_individual_obj[indivial_i,:] = [16. 7. 21. 28.]
670 cord_individual_obj[indivial_i,:] = [17. 6. 68. 74.]
671 cord_individual_obj[indivial_i,:] = [18. 5. 77. 82.]
672 cord_individual_obj[indivial_i,:] = [19. 7. 59. 66.]
673 cord_individual_obj[indivial_i,:] = [20. 6. 97. 103.]
674 cord_individual_obj[indivial_i,:] = [21. 8. 46. 54.]
675 cord_individual_obj[indivial_i,:] = [22. 7. 60. 67.]
676 cord_individual_obj[indivial_i,:] = [23. 8. 99. 107.]
677 cord_individual_obj[indivial_i,:] = [24. 7. 101. 108.]
678
679 min(cord_individual_obj[:, 3]) = 28.0
680 historl_G_best_iter[iter, 3] = 28.0
681 Iteration calculate over
682
683
684
685
686 All item are in Bin and:
687 Bin area = 1080
688 Real_area = 172.0
689 Proportion_of_area = 0.15925925925925927
690 BEST_CHROM =
691 berth: [ 2.5 23. 24.5 17. 16.5 2. 6.5 11. 8.5 7. 13.5 21. ]
692 time: [3. 4. 2. 2. 3. 0. 3. 3. 1. 0. 0. 0. ]
693 num_QC: [5. 2. 2. 6. 2. 3. 2. 4. 5. 5. 3. 4. ]
694 Objective function values and some other indicators:
695 Obj0 = 7.00 Obj1 = 21.00 Obj0 + Obj1 = 28.00
696 Total movement of crane: 0.00
697 Total waiting time in berth position: 21.00
698 Total index of q during berthing: 666.00
699 Specific arrangement for each vessel:
700 V_id: 0 li: 5.0 xi: 2.5 bow of i: 0.0 tail of i: 5.0 gama_i0: 3.0 gama_i1: 4.0
701 .0 work load gap_i: 0 gama_i1 + 1: 5.0 gama_i1 - gama_i0: 1.0 duration_time_i: 2.0 demand_i: 140.0 work load_i:
702 V_id: 1 li: 8.0 xi: 23.0 bow of i: 19.0 tail of i: 27.0 gama_i0: 4.0 gama_i1: 7
703 .0 work load gap_i: 0 gama_i1 + 1: 8.0 gama_i1 - gama_i0: 3.0 duration_time_i: 4.0 demand_i: 140.0 work
704 V_id: 2 li: 7.0 xi: 24.5 bow of i: 21.0 tail of i: 28.0 gama_i0: 2.0 gama_i1: 3
705 .0 work load gap_i: 0 gama_i1 + 1: 4.0 gama_i1 - gama_i0: 1.0 duration_time_i: 2.0 demand_i: 60.0 work
706 V_id: 3 li: 8.0 xi: 17.0 bow of i: 13.0 tail of i: 21.0 gama_i0: 2.0 gama_i1: 2
707 .0 work load gap_i: 0 gama_i1 + 1: 3.0 gama_i1 - gama_i0: 0.0 duration_time_i: 1.0 demand_i: 80.0 work
708 V_id: 4 li: 5.0 xi: 16.5 bow of i: 14.0 tail of i: 19.0 gama_i0: 3.0 gama_i1: 6
709 .0 work load gap_i: 0 gama_i1 + 1: 7.0 gama_i1 - gama_i0: 3.0 duration_time_i: 4.0 demand_i: 140.0 work
710 V_id: 5 li: 4.0 xi: 2.0 bow of i: 0.0 tail of i: 4.0 gama_i0: 0.0 gama_i1: 1.0
711 .0 work load gap_i: 0 gama_i1 + 1: 2.0 gama_i1 - gama_i0: 1.0 duration_time_i: 2.0 demand_i: 120.0 work load_i:
712 V_id: 6 li: 3.0 xi: 6.5 bow of i: 5.0 tail of i: 8.0 gama_i0: 3.0 gama_i1: 5.0
713 .0 work load gap_i: 0 gama_i1 + 1: 6.0 gama_i1 - gama_i0: 2.0 duration_time_i: 3.0 demand_i: 120.0 work load_i:
714 V_id: 7 li: 6.0 xi: 11.0 bow of i: 8.0 tail of i: 14.0 gama_i0: 3.0 gama_i1: 4
715 .0 work load gap_i: 0 gama_i1 + 1: 5.0 gama_i1 - gama_i0: 1.0 duration_time_i: 2.0 demand_i: 100.0 work
716 V_id: 8 li: 9.0 xi: 8.5 bow of i: 4.0 tail of i: 13.0 gama_i0: 1.0 gama_i1: 2.0
717 .0 work load gap_i: 0 gama_i1 + 1: 3.0 gama_i1 - gama_i0: 1.0 duration_time_i: 2.0 demand_i: 140.0 work load_i:
718 V_id: 9 li: 6.0 xi: 7.0 bow of i: 4.0 tail of i: 10.0 gama_i0: 0.0 gama_i1: 0.0
719 .0 work load gap_i: 0 gama_i1 + 1: 1.0 gama_i1 - gama_i0: 0.0 duration_time_i: 1.0 demand_i: 100.0 work load_i:
720 V_id: 10 li: 7.0 xi: 13.5 bow of i: 10.0 tail of i: 17.0 gama_i0: 0.0 gama_i1: 1
721 .0 work load gap_i: 0 gama_i1 + 1: 1.0 gama_i1 - gama_i0: 0.0 duration_time_i: 1.0 demand_i: 60.0 work
722 V_id: 11 li: 8.0 xi: 21.0 bow of i: 17.0 tail of i: 25.0 gama_i0: 0.0 gama_i1: 1
723 .0 work load gap_i: 0 gama_i1 + 1: 2.0 gama_i1 - gama_i0: 1.0 duration_time_i: 2.0 demand_i: 120.0 work
724
725 Algorithm finished and the total CPU time: 314 s
726 End
727

```