

unknown

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80 cord_individual_obj[indivial_i,:] = [16. 8. 91. 99.]
81 cord_individual_obj[indivial_i,:] = [17. 6. 62. 68.]
82 cord_individual_obj[indivial_i,:] = [18. 6. 35. 41.]
83 cord_individual_obj[indivial_i,:] = [19. 7. 22. 29.]
84 cord_individual_obj[indivial_i,:] = [20. 8. 38. 46.]
85 cord_individual_obj[indivial_i,:] = [21. 7. 33. 40.]
86 cord_individual_obj[indivial_i,:] = [22. 5. 84. 89.]
87 cord_individual_obj[indivial_i,:] = [23. 8. 43. 51.]
88 cord_individual_obj[indivial_i,:] = [24. 6. 62. 68.]
89
90 min(cord_individual_obj[:,3]) = 29.0
91 historl_G_best_iter[iter, 3] = 29.0
92 Begin iteration:
93
94 iter = 2
95 cord_individual_obj[indivial_i,:] = [ 0. 8. 125. 133.]
96 cord_individual_obj[indivial_i,:] = [ 1. 7. 22. 29.]
97 cord_individual_obj[indivial_i,:] = [ 2. 5. 62. 67.]
98 cord_individual_obj[indivial_i,:] = [ 3. 6. 58. 64.]
99 cord_individual_obj[indivial_i,:] = [ 4. 7. 67. 74.]
100 cord_individual_obj[indivial_i,:] = [ 5. 6. 44. 50.]
101 cord_individual_obj[indivial_i,:] = [ 6. 6. 62. 68.]
102 cord_individual_obj[indivial_i,:] = [ 7. 7. 64. 71.]
103 cord_individual_obj[indivial_i,:] = [ 8. 5. 55. 60.]
104 cord_individual_obj[indivial_i,:] = [ 9. 10. 63. 73.]
105 cord_individual_obj[indivial_i,:] = [10. 5. 70. 75.]
106 cord_individual_obj[indivial_i,:] = [11. 8. 130. 138.]
107 cord_individual_obj[indivial_i,:] = [12. 8. 25. 33.]
108 cord_individual_obj[indivial_i,:] = [13. 5. 75. 80.]
109 cord_individual_obj[indivial_i,:] = [14. 7. 87. 94.]
110 cord_individual_obj[indivial_i,:] = [15. 6. 71. 77.]
111 cord_individual_obj[indivial_i,:] = [16. 6. 56. 62.]
112 cord_individual_obj[indivial_i,:] = [17. 5. 66. 71.]
113 cord_individual_obj[indivial_i,:] = [18. 8. 34. 42.]
114 cord_individual_obj[indivial_i,:] = [19. 6. 85. 91.]
115 cord_individual_obj[indivial_i,:] = [20. 7. 35. 42.]
116 cord_individual_obj[indivial_i,:] = [21. 7. 33. 40.]
117 cord_individual_obj[indivial_i,:] = [22. 8. 44. 52.]
118 cord_individual_obj[indivial_i,:] = [23. 7. 58. 65.]
119 cord_individual_obj[indivial_i,:] = [24. 7. 68. 75.]
120
121 min(cord_individual_obj[:,3]) = 29.0
122 historl_G_best_iter[iter, 3] = 29.0
123 Begin iteration:
124
125 iter = 3
126 cord_individual_obj[indivial_i,:] = [ 0. 7. 86. 93.]
127 cord_individual_obj[indivial_i,:] = [ 1. 4. 157. 161.]
128 cord_individual_obj[indivial_i,:] = [ 2. 7. 64. 71.]
129 cord_individual_obj[indivial_i,:] = [ 3. 4. 56. 60.]
130 cord_individual_obj[indivial_i,:] = [ 4. 7. 74. 81.]
131 cord_individual_obj[indivial_i,:] = [ 5. 8. 83. 91.]
132 cord_individual_obj[indivial_i,:] = [ 6. 7. 67. 74.]
133 cord_individual_obj[indivial_i,:] = [ 7. 7. 43. 50.]
134 cord_individual_obj[indivial_i,:] = [ 8. 6. 80. 86.]
135 cord_individual_obj[indivial_i,:] = [ 9. 7. 55. 62.]
136 cord_individual_obj[indivial_i,:] = [10. 6. 73. 79.]
137 cord_individual_obj[indivial_i,:] = [11. 7. 22. 29.]
138 cord_individual_obj[indivial_i,:] = [12. 5. 119. 124.]
139 cord_individual_obj[indivial_i,:] = [13. 5. 83. 88.]
140 cord_individual_obj[indivial_i,:] = [14. 7. 69. 76.]
141 cord_individual_obj[indivial_i,:] = [15. 8. 88. 96.]
142 cord_individual_obj[indivial_i,:] = [16. 8. 55. 63.]
143 cord_individual_obj[indivial_i,:] = [17. 7. 65. 72.]
144 cord_individual_obj[indivial_i,:] = [18. 7. 42. 49.]
145 cord_individual_obj[indivial_i,:] = [19. 6. 84. 90.]
146 cord_individual_obj[indivial_i,:] = [20. 8. 77. 85.]
147 cord_individual_obj[indivial_i,:] = [21. 7. 93. 100.]
148 cord_individual_obj[indivial_i,:] = [22. 4. 57. 61.]
149 cord_individual_obj[indivial_i,:] = [23. 9. 52. 61.]
150 cord_individual_obj[indivial_i,:] = [24. 5. 67. 72.]
151
152 min(cord_individual_obj[:,3]) = 29.0
153 historl_G_best_iter[iter, 3] = 29.0
154 Begin iteration:
155
156 iter = 4
157 cord_individual_obj[indivial_i,:] = [ 0. 8. 125. 133.]
158 cord_individual_obj[indivial_i,:] = [ 1. 7. 22. 29.]
159 cord_individual_obj[indivial_i,:] = [ 2. 8. 30. 38.]
160 cord_individual_obj[indivial_i,:] = [ 3. 6. 58. 64.]
161 cord_individual_obj[indivial_i,:] = [ 4. 7. 56. 63.]
162 cord_individual_obj[indivial_i,:] = [ 5. 7. 40. 47.]
163 cord_individual_obj[indivial_i,:] = [ 6. 6. 62. 68.]

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164 cord_individual_obj[indivial_i,:] = [ 7. 7. 76. 83.]
165 cord_individual_obj[indivial_i,:] = [ 8. 5. 116. 121.]
166 cord_individual_obj[indivial_i,:] = [ 9. 10. 63. 73.]
167 cord_individual_obj[indivial_i,:] = [10. 5. 56. 61.]
168 cord_individual_obj[indivial_i,:] = [11. 8. 97. 105.]
169 cord_individual_obj[indivial_i,:] = [12. 6. 25. 31.]
170 cord_individual_obj[indivial_i,:] = [13. 6. 85. 91.]
171 cord_individual_obj[indivial_i,:] = [14. 6. 67. 73.]
172 cord_individual_obj[indivial_i,:] = [15. 8. 76. 84.]
173 cord_individual_obj[indivial_i,:] = [16. 7. 89. 96.]
174 cord_individual_obj[indivial_i,:] = [17. 5. 66. 71.]
175 cord_individual_obj[indivial_i,:] = [18. 7. 40. 47.]
176 cord_individual_obj[indivial_i,:] = [19. 7. 87. 94.]
177 cord_individual_obj[indivial_i,:] = [20. 8. 57. 65.]
178 cord_individual_obj[indivial_i,:] = [21. 7. 33. 40.]
179 cord_individual_obj[indivial_i,:] = [22. 6. 69. 75.]
180 cord_individual_obj[indivial_i,:] = [23. 9. 101. 110.]
181 cord_individual_obj[indivial_i,:] = [24. 7. 40. 47.]
182
183 min(cord_individual_obj[:,3]) = 29.0
184 historl_G_best_iter[iter,3] = 29.0
185 Begin iteration:
186
187 iter = 5
188 cord_individual_obj[indivial_i,:] = [ 0. 7. 22. 29.]
189 cord_individual_obj[indivial_i,:] = [ 1. 7. 80. 87.]
190 cord_individual_obj[indivial_i,:] = [ 2. 9. 93. 102.]
191 cord_individual_obj[indivial_i,:] = [ 3. 6. 60. 66.]
192 cord_individual_obj[indivial_i,:] = [ 4. 7. 105. 112.]
193 cord_individual_obj[indivial_i,:] = [ 5. 6. 50. 56.]
194 cord_individual_obj[indivial_i,:] = [ 6. 7. 47. 54.]
195 cord_individual_obj[indivial_i,:] = [ 7. 5. 58. 63.]
196 cord_individual_obj[indivial_i,:] = [ 8. 5. 97. 102.]
197 cord_individual_obj[indivial_i,:] = [ 9. 6. 58. 64.]
198 cord_individual_obj[indivial_i,:] = [10. 6. 62. 68.]
199 cord_individual_obj[indivial_i,:] = [11. 7. 74. 81.]
200 cord_individual_obj[indivial_i,:] = [12. 6. 93. 99.]
201 cord_individual_obj[indivial_i,:] = [13. 7. 75. 82.]
202 cord_individual_obj[indivial_i,:] = [14. 6. 49. 55.]
203 cord_individual_obj[indivial_i,:] = [15. 7. 70. 77.]
204 cord_individual_obj[indivial_i,:] = [16. 6. 56. 62.]
205 cord_individual_obj[indivial_i,:] = [17. 6. 74. 80.]
206 cord_individual_obj[indivial_i,:] = [18. 8. 29. 37.]
207 cord_individual_obj[indivial_i,:] = [19. 5. 97. 102.]
208 cord_individual_obj[indivial_i,:] = [20. 7. 40. 47.]
209 cord_individual_obj[indivial_i,:] = [21. 9. 101. 110.]
210 cord_individual_obj[indivial_i,:] = [22. 7. 94. 101.]
211 cord_individual_obj[indivial_i,:] = [23. 7. 121. 128.]
212 cord_individual_obj[indivial_i,:] = [24. 7. 88. 95.]
213
214 min(cord_individual_obj[:,3]) = 29.0
215 historl_G_best_iter[iter,3] = 29.0
216 Begin iteration:
217
218 iter = 6
219 cord_individual_obj[indivial_i,:] = [ 0. 9. 106. 115.]
220 cord_individual_obj[indivial_i,:] = [ 1. 5. 77. 82.]
221 cord_individual_obj[indivial_i,:] = [ 2. 7. 41. 48.]
222 cord_individual_obj[indivial_i,:] = [ 3. 6. 62. 68.]
223 cord_individual_obj[indivial_i,:] = [ 4. 7. 44. 51.]
224 cord_individual_obj[indivial_i,:] = [ 5. 7. 36. 43.]
225 cord_individual_obj[indivial_i,:] = [ 6. 7. 76. 83.]
226 cord_individual_obj[indivial_i,:] = [ 7. 6. 29. 35.]
227 cord_individual_obj[indivial_i,:] = [ 8. 5. 81. 86.]
228 cord_individual_obj[indivial_i,:] = [ 9. 6. 30. 36.]
229 cord_individual_obj[indivial_i,:] = [10. 6. 65. 71.]
230 cord_individual_obj[indivial_i,:] = [11. 7. 76. 83.]
231 cord_individual_obj[indivial_i,:] = [12. 5. 101. 106.]
232 cord_individual_obj[indivial_i,:] = [13. 8. 102. 110.]
233 cord_individual_obj[indivial_i,:] = [14. 7. 53. 60.]
234 cord_individual_obj[indivial_i,:] = [15. 7. 71. 78.]
235 cord_individual_obj[indivial_i,:] = [16. 8. 65. 73.]
236 cord_individual_obj[indivial_i,:] = [17. 7. 43. 50.]
237 cord_individual_obj[indivial_i,:] = [18. 5. 27. 32.]
238 cord_individual_obj[indivial_i,:] = [19. 6. 67. 73.]
239 cord_individual_obj[indivial_i,:] = [20. 8. 38. 46.]
240 cord_individual_obj[indivial_i,:] = [21. 8. 43. 51.]
241 cord_individual_obj[indivial_i,:] = [22. 6. 75. 81.]
242 cord_individual_obj[indivial_i,:] = [23. 7. 22. 29.]
243 cord_individual_obj[indivial_i,:] = [24. 7. 67. 74.]
244
245 min(cord_individual_obj[:,3]) = 29.0
246 historl_G_best_iter[iter,3] = 29.0
247 Begin iteration:

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248
249 iter = 7
250 cord_individual_obj[indivial_i, :] = [ 0. 7. 22. 29.]
251 cord_individual_obj[indivial_i, :] = [ 1. 6. 74. 80.]
252 cord_individual_obj[indivial_i, :] = [ 2. 6. 62. 68.]
253 cord_individual_obj[indivial_i, :] = [ 3. 5. 51. 56.]
254 cord_individual_obj[indivial_i, :] = [ 4. 6. 53. 59.]
255 cord_individual_obj[indivial_i, :] = [ 5. 7. 30. 37.]
256 cord_individual_obj[indivial_i, :] = [ 6. 8. 46. 54.]
257 cord_individual_obj[indivial_i, :] = [ 7. 5. 26. 31.]
258 cord_individual_obj[indivial_i, :] = [ 8. 6. 74. 80.]
259 cord_individual_obj[indivial_i, :] = [ 9. 7. 45. 52.]
260 cord_individual_obj[indivial_i, :] = [ 10. 6. 105. 111.]
261 cord_individual_obj[indivial_i, :] = [ 11. 6. 42. 48.]
262 cord_individual_obj[indivial_i, :] = [ 12. 6. 57. 63.]
263 cord_individual_obj[indivial_i, :] = [ 13. 5. 94. 99.]
264 cord_individual_obj[indivial_i, :] = [ 14. 7. 67. 74.]
265 cord_individual_obj[indivial_i, :] = [ 15. 9. 65. 74.]
266 cord_individual_obj[indivial_i, :] = [ 16. 8. 80. 88.]
267 cord_individual_obj[indivial_i, :] = [ 17. 6. 84. 90.]
268 cord_individual_obj[indivial_i, :] = [ 18. 5. 60. 65.]
269 cord_individual_obj[indivial_i, :] = [ 19. 7. 92. 99.]
270 cord_individual_obj[indivial_i, :] = [ 20. 7. 85. 92.]
271 cord_individual_obj[indivial_i, :] = [ 21. 7. 68. 75.]
272 cord_individual_obj[indivial_i, :] = [ 22. 6. 138. 144.]
273 cord_individual_obj[indivial_i, :] = [ 23. 10. 49. 59.]
274 cord_individual_obj[indivial_i, :] = [ 24. 7. 55. 62.]
275

276 min(cord_individual_obj[:, 3]) = 29.0
277 historl_G_best_iter[iter, 3] = 29.0
278 Begin iteration:
279
280 iter = 8
281 cord_individual_obj[indivial_i, :] = [ 0. 10. 119. 129.]
282 cord_individual_obj[indivial_i, :] = [ 1. 5. 52. 57.]
283 cord_individual_obj[indivial_i, :] = [ 2. 5. 61. 66.]
284 cord_individual_obj[indivial_i, :] = [ 3. 5. 71. 76.]
285 cord_individual_obj[indivial_i, :] = [ 4. 6. 54. 60.]
286 cord_individual_obj[indivial_i, :] = [ 5. 6. 96. 102.]
287 cord_individual_obj[indivial_i, :] = [ 6. 7. 28. 35.]
288 cord_individual_obj[indivial_i, :] = [ 7. 7. 69. 76.]
289 cord_individual_obj[indivial_i, :] = [ 8. 5. 95. 100.]
290 cord_individual_obj[indivial_i, :] = [ 9. 4. 62. 66.]
291 cord_individual_obj[indivial_i, :] = [ 10. 6. 56. 62.]
292 cord_individual_obj[indivial_i, :] = [ 11. 6. 41. 47.]
293 cord_individual_obj[indivial_i, :] = [ 12. 6. 30. 36.]
294 cord_individual_obj[indivial_i, :] = [ 13. 6. 48. 54.]
295 cord_individual_obj[indivial_i, :] = [ 14. 5. 36. 41.]
296 cord_individual_obj[indivial_i, :] = [ 15. 7. 39. 46.]
297 cord_individual_obj[indivial_i, :] = [ 16. 8. 49. 57.]
298 cord_individual_obj[indivial_i, :] = [ 17. 6. 39. 45.]
299 cord_individual_obj[indivial_i, :] = [ 18. 7. 41. 48.]
300 cord_individual_obj[indivial_i, :] = [ 19. 7. 44. 51.]
301 cord_individual_obj[indivial_i, :] = [ 20. 6. 24. 30.]
302 cord_individual_obj[indivial_i, :] = [ 21. 7. 109. 116.]
303 cord_individual_obj[indivial_i, :] = [ 22. 7. 22. 29.]
304 cord_individual_obj[indivial_i, :] = [ 23. 7. 83. 90.]
305 cord_individual_obj[indivial_i, :] = [ 24. 6. 64. 70.]
306

307 min(cord_individual_obj[:, 3]) = 29.0
308 historl_G_best_iter[iter, 3] = 29.0
309 Begin iteration:
310
311 iter = 9
312 cord_individual_obj[indivial_i, :] = [ 0. 7. 22. 29.]
313 cord_individual_obj[indivial_i, :] = [ 1. 6. 66. 72.]
314 cord_individual_obj[indivial_i, :] = [ 2. 6. 106. 112.]
315 cord_individual_obj[indivial_i, :] = [ 3. 5. 59. 64.]
316 cord_individual_obj[indivial_i, :] = [ 4. 6. 45. 51.]
317 cord_individual_obj[indivial_i, :] = [ 5. 8. 32. 40.]
318 cord_individual_obj[indivial_i, :] = [ 6. 6. 24. 30.]
319 cord_individual_obj[indivial_i, :] = [ 7. 6. 41. 47.]
320 cord_individual_obj[indivial_i, :] = [ 8. 5. 72. 77.]
321 cord_individual_obj[indivial_i, :] = [ 9. 5. 46. 51.]
322 cord_individual_obj[indivial_i, :] = [ 10. 9. 84. 93.]
323 cord_individual_obj[indivial_i, :] = [ 11. 6. 73. 79.]
324 cord_individual_obj[indivial_i, :] = [ 12. 4. 39. 43.]
325 cord_individual_obj[indivial_i, :] = [ 13. 6. 109. 115.]
326 cord_individual_obj[indivial_i, :] = [ 14. 8. 48. 56.]
327 cord_individual_obj[indivial_i, :] = [ 15. 7. 55. 62.]
328 cord_individual_obj[indivial_i, :] = [ 16. 8. 57. 65.]
329 cord_individual_obj[indivial_i, :] = [ 17. 7. 41. 48.]
330 cord_individual_obj[indivial_i, :] = [ 18. 5. 68. 73.]
331 cord_individual_obj[indivial_i, :] = [ 19. 7. 61. 68.]

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unknown

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332     cord_individual_obj[indivial_i,:] = [ 20. 7. 117. 124.]  
333     cord_individual_obj[indivial_i,:] = [ 21. 7. 101. 108.]  
334     cord_individual_obj[indivial_i,:] = [22. 6. 64. 70.]  
335     cord_individual_obj[indivial_i,:] = [23. 8. 74. 82.]  
336     cord_individual_obj[indivial_i,:] = [24. 6. 57. 63.]  
337  
338 min(cord_individual_obj[:,3]) = 29.0  
339 historl_G_best_iter[iter,3] = 29.0  
340 Begin iteration:  
341  
342 iter = 10  
343     cord_individual_obj[indivial_i,:] = [ 0. 10. 106. 116.]  
344     cord_individual_obj[indivial_i,:] = [ 1. 7. 59. 66.]  
345     cord_individual_obj[indivial_i,:] = [ 2. 5. 33. 38.]  
346     cord_individual_obj[indivial_i,:] = [ 3. 6. 67. 73.]  
347     cord_individual_obj[indivial_i,:] = [ 4. 5. 73. 78.]  
348     cord_individual_obj[indivial_i,:] = [ 5. 7. 64. 71.]  
349     cord_individual_obj[indivial_i,:] = [ 6. 8. 64. 72.]  
350     cord_individual_obj[indivial_i,:] = [ 7. 8. 39. 47.]  
351     cord_individual_obj[indivial_i,:] = [ 8. 5. 52. 57.]  
352     cord_individual_obj[indivial_i,:] = [ 9. 6. 22. 28.]  
353     cord_individual_obj[indivial_i,:] = [10. 6. 74. 80.]  
354     cord_individual_obj[indivial_i,:] = [11. 7. 70. 77.]  
355     cord_individual_obj[indivial_i,:] = [12. 6. 106. 112.]  
356     cord_individual_obj[indivial_i,:] = [13. 7. 84. 91.]  
357     cord_individual_obj[indivial_i,:] = [14. 5. 50. 55.]  
358     cord_individual_obj[indivial_i,:] = [15. 10. 78. 88.]  
359     cord_individual_obj[indivial_i,:] = [16. 8. 84. 92.]  
360     cord_individual_obj[indivial_i,:] = [17. 7. 52. 59.]  
361     cord_individual_obj[indivial_i,:] = [18. 6. 83. 89.]  
362     cord_individual_obj[indivial_i,:] = [19. 7. 86. 93.]  
363     cord_individual_obj[indivial_i,:] = [20. 7. 22. 29.]  
364     cord_individual_obj[indivial_i,:] = [21. 7. 34. 41.]  
365     cord_individual_obj[indivial_i,:] = [22. 7. 65. 72.]  
366     cord_individual_obj[indivial_i,:] = [23. 9. 43. 52.]  
367     cord_individual_obj[indivial_i,:] = [24. 7. 98. 105.]  
368  
369 min(cord_individual_obj[:,3]) = 28.0  
370 historl_G_best_iter[iter,3] = 28.0  
371 Begin iteration:  
372  
373 iter = 11  
374     cord_individual_obj[indivial_i,:] = [ 0. 6. 22. 28.]  
375     cord_individual_obj[indivial_i,:] = [ 1. 6. 93. 99.]  
376     cord_individual_obj[indivial_i,:] = [ 2. 7. 34. 41.]  
377     cord_individual_obj[indivial_i,:] = [ 3. 6. 55. 61.]  
378     cord_individual_obj[indivial_i,:] = [ 4. 8. 64. 72.]  
379     cord_individual_obj[indivial_i,:] = [ 5. 6. 31. 37.]  
380     cord_individual_obj[indivial_i,:] = [ 6. 7. 37. 44.]  
381     cord_individual_obj[indivial_i,:] = [ 7. 8. 52. 60.]  
382     cord_individual_obj[indivial_i,:] = [ 8. 7. 98. 105.]  
383     cord_individual_obj[indivial_i,:] = [ 9. 5. 54. 59.]  
384     cord_individual_obj[indivial_i,:] = [10. 6. 38. 44.]  
385     cord_individual_obj[indivial_i,:] = [11. 6. 73. 79.]  
386     cord_individual_obj[indivial_i,:] = [12. 6. 30. 36.]  
387     cord_individual_obj[indivial_i,:] = [13. 9. 29. 38.]  
388     cord_individual_obj[indivial_i,:] = [14. 6. 73. 79.]  
389     cord_individual_obj[indivial_i,:] = [15. 6. 30. 36.]  
390     cord_individual_obj[indivial_i,:] = [16. 7. 108. 115.]  
391     cord_individual_obj[indivial_i,:] = [17. 5. 58. 63.]  
392     cord_individual_obj[indivial_i,:] = [18. 6. 63. 69.]  
393     cord_individual_obj[indivial_i,:] = [19. 6. 64. 70.]  
394     cord_individual_obj[indivial_i,:] = [20. 6. 37. 43.]  
395     cord_individual_obj[indivial_i,:] = [21. 7. 66. 73.]  
396     cord_individual_obj[indivial_i,:] = [22. 8. 70. 78.]  
397     cord_individual_obj[indivial_i,:] = [23. 7. 105. 112.]  
398     cord_individual_obj[indivial_i,:] = [24. 6. 63. 69.]  
399  
400 min(cord_individual_obj[:,3]) = 28.0  
401 historl_G_best_iter[iter,3] = 28.0  
402 Begin iteration:  
403  
404 iter = 12  
405     cord_individual_obj[indivial_i,:] = [ 0. 6. 71. 77.]  
406     cord_individual_obj[indivial_i,:] = [ 1. 6. 42. 48.]  
407     cord_individual_obj[indivial_i,:] = [ 2. 5. 29. 34.]  
408     cord_individual_obj[indivial_i,:] = [ 3. 6. 61. 67.]  
409     cord_individual_obj[indivial_i,:] = [ 4. 6. 51. 57.]  
410     cord_individual_obj[indivial_i,:] = [ 5. 6. 70. 76.]  
411     cord_individual_obj[indivial_i,:] = [ 6. 8. 53. 61.]  
412     cord_individual_obj[indivial_i,:] = [ 7. 6. 35. 41.]  
413     cord_individual_obj[indivial_i,:] = [ 8. 6. 35. 41.]  
414     cord_individual_obj[indivial_i,:] = [ 9. 4. 70. 74.]  
415     cord_individual_obj[indivial_i,:] = [10. 6. 25. 31.]
```

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416 cord_individual_obj[indivial_i,:] = [11. 8. 88. 96.]
417 cord_individual_obj[indivial_i,:] = [12. 5. 45. 50.]
418 cord_individual_obj[indivial_i,:] = [13. 6. 45. 51.]
419 cord_individual_obj[indivial_i,:] = [14. 8. 43. 51.]
420 cord_individual_obj[indivial_i,:] = [15. 5. 58. 63.]
421 cord_individual_obj[indivial_i,:] = [16. 6. 22. 28.]
422 cord_individual_obj[indivial_i,:] = [17. 7. 57. 64.]
423 cord_individual_obj[indivial_i,:] = [18. 5. 35. 40.]
424 cord_individual_obj[indivial_i,:] = [19. 6. 60. 66.]
425 cord_individual_obj[indivial_i,:] = [20. 6. 31. 37.]
426 cord_individual_obj[indivial_i,:] = [21. 6. 33. 39.]
427 cord_individual_obj[indivial_i,:] = [22. 6. 42. 48.]
428 cord_individual_obj[indivial_i,:] = [23. 7. 35. 42.]
429 cord_individual_obj[indivial_i,:] = [24. 6. 88. 94.]
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. 5. 67. 72.]
437 cord_individual_obj[indivial_i,:] = [ 1. 8. 68. 76.]
438 cord_individual_obj[indivial_i,:] = [ 2. 6. 74. 80.]
439 cord_individual_obj[indivial_i,:] = [ 3. 7. 74. 81.]
440 cord_individual_obj[indivial_i,:] = [ 4. 8. 62. 70.]
441 cord_individual_obj[indivial_i,:] = [ 5. 7. 103. 110.]
442 cord_individual_obj[indivial_i,:] = [ 6. 6. 58. 64.]
443 cord_individual_obj[indivial_i,:] = [ 7. 6. 35. 41.]
444 cord_individual_obj[indivial_i,:] = [ 8. 7. 109. 116.]
445 cord_individual_obj[indivial_i,:] = [ 9. 6. 44. 50.]
446 cord_individual_obj[indivial_i,:] = [10. 6. 71. 77.]
447 cord_individual_obj[indivial_i,:] = [11. 6. 22. 28.]
448 cord_individual_obj[indivial_i,:] = [12. 7. 62. 69.]
449 cord_individual_obj[indivial_i,:] = [13. 6. 62. 68.]
450 cord_individual_obj[indivial_i,:] = [14. 6. 57. 63.]
451 cord_individual_obj[indivial_i,:] = [15. 5. 70. 75.]
452 cord_individual_obj[indivial_i,:] = [16. 8. 80. 88.]
453 cord_individual_obj[indivial_i,:] = [17. 7. 70. 77.]
454 cord_individual_obj[indivial_i,:] = [18. 7. 51. 58.]
455 cord_individual_obj[indivial_i,:] = [19. 5. 87. 92.]
456 cord_individual_obj[indivial_i,:] = [20. 5. 55. 60.]
457 cord_individual_obj[indivial_i,:] = [21. 7. 52. 59.]
458 cord_individual_obj[indivial_i,:] = [22. 7. 120. 127.]
459 cord_individual_obj[indivial_i,:] = [23. 9. 44. 53.]
460 cord_individual_obj[indivial_i,:] = [24. 7. 60. 67.]
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. 5. 84. 89.]
468 cord_individual_obj[indivial_i,:] = [ 1. 7. 73. 80.]
469 cord_individual_obj[indivial_i,:] = [ 2. 8. 32. 40.]
470 cord_individual_obj[indivial_i,:] = [ 3. 5. 93. 98.]
471 cord_individual_obj[indivial_i,:] = [ 4. 6. 37. 43.]
472 cord_individual_obj[indivial_i,:] = [ 5. 7. 56. 63.]
473 cord_individual_obj[indivial_i,:] = [ 6. 7. 55. 62.]
474 cord_individual_obj[indivial_i,:] = [ 7. 6. 21. 27.]
475 cord_individual_obj[indivial_i,:] = [ 8. 4. 114. 118.]
476 cord_individual_obj[indivial_i,:] = [ 9. 6. 60. 66.]
477 cord_individual_obj[indivial_i,:] = [10. 7. 75. 82.]
478 cord_individual_obj[indivial_i,:] = [11. 7. 62. 69.]
479 cord_individual_obj[indivial_i,:] = [12. 8. 65. 73.]
480 cord_individual_obj[indivial_i,:] = [13. 6. 78. 84.]
481 cord_individual_obj[indivial_i,:] = [14. 7. 40. 47.]
482 cord_individual_obj[indivial_i,:] = [15. 7. 173. 180.]
483 cord_individual_obj[indivial_i,:] = [16. 6. 57. 63.]
484 cord_individual_obj[indivial_i,:] = [17. 5. 48. 53.]
485 cord_individual_obj[indivial_i,:] = [18. 6. 59. 65.]
486 cord_individual_obj[indivial_i,:] = [19. 5. 74. 79.]
487 cord_individual_obj[indivial_i,:] = [20. 7. 60. 67.]
488 cord_individual_obj[indivial_i,:] = [21. 5. 106. 111.]
489 cord_individual_obj[indivial_i,:] = [22. 6. 22. 28.]
490 cord_individual_obj[indivial_i,:] = [23. 6. 41. 47.]
491 cord_individual_obj[indivial_i,:] = [24. 7. 87. 94.]
492
493 min(cord_individual_obj[:,3]) = 27.0
494 histol_G_best_iter[iter,3] = 27.0
495 Begin iteration:
496
497 iter = 15
498 cord_individual_obj[indivial_i,:] = [ 0. 6. 40. 46.]
499 cord_individual_obj[indivial_i,:] = [ 1. 7. 66. 73.]

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500 cord_individual_obj[indivial_i,:] = [ 2. 6. 78. 84.]
501 cord_individual_obj[indivial_i,:] = [ 3. 6. 26. 32.]
502 cord_individual_obj[indivial_i,:] = [ 4. 8. 26. 34.]
503 cord_individual_obj[indivial_i,:] = [ 5. 6. 63. 69.]
504 cord_individual_obj[indivial_i,:] = [ 6. 5. 38. 43.]
505 cord_individual_obj[indivial_i,:] = [ 7. 6. 38. 44.]
506 cord_individual_obj[indivial_i,:] = [ 8. 6. 95. 101.]
507 cord_individual_obj[indivial_i,:] = [ 9. 7. 46. 53.]
508 cord_individual_obj[indivial_i,:] = [10. 5. 65. 70.]
509 cord_individual_obj[indivial_i,:] = [11. 5. 25. 30.]
510 cord_individual_obj[indivial_i,:] = [12. 6. 30. 36.]
511 cord_individual_obj[indivial_i,:] = [13. 6. 69. 75.]
512 cord_individual_obj[indivial_i,:] = [14. 7. 26. 33.]
513 cord_individual_obj[indivial_i,:] = [15. 6. 21. 27.]
514 cord_individual_obj[indivial_i,:] = [16. 6. 40. 46.]
515 cord_individual_obj[indivial_i,:] = [17. 6. 48. 54.]
516 cord_individual_obj[indivial_i,:] = [18. 9. 25. 34.]
517 cord_individual_obj[indivial_i,:] = [19. 7. 23. 30.]
518 cord_individual_obj[indivial_i,:] = [20. 7. 25. 32.]
519 cord_individual_obj[indivial_i,:] = [21. 5. 91. 96.]
520 cord_individual_obj[indivial_i,:] = [22. 7. 93. 100.]
521 cord_individual_obj[indivial_i,:] = [23. 7. 27. 34.]
522 cord_individual_obj[indivial_i,:] = [24. 7. 28. 35.]
523
524 min(cord_individual_obj[:,3]) = 27.0
525 histol_G_best_iter[iter,3] = 27.0
526 Begin iteration:
527
528 iter = 16
529 cord_individual_obj[indivial_i,:] = [ 0. 6. 30. 36.]
530 cord_individual_obj[indivial_i,:] = [ 1. 6. 25. 31.]
531 cord_individual_obj[indivial_i,:] = [ 2. 7. 20. 27.]
532 cord_individual_obj[indivial_i,:] = [ 3. 5. 31. 36.]
533 cord_individual_obj[indivial_i,:] = [ 4. 5. 23. 28.]
534 cord_individual_obj[indivial_i,:] = [ 5. 7. 25. 32.]
535 cord_individual_obj[indivial_i,:] = [ 6. 8. 30. 38.]
536 cord_individual_obj[indivial_i,:] = [ 7. 5. 19. 24.]
537 cord_individual_obj[indivial_i,:] = [ 8. 6. 21. 27.]
538 cord_individual_obj[indivial_i,:] = [ 9. 8. 35. 43.]
539 cord_individual_obj[indivial_i,:] = [10. 7. 38. 45.]
540 cord_individual_obj[indivial_i,:] = [11. 6. 58. 64.]
541 cord_individual_obj[indivial_i,:] = [12. 7. 30. 37.]
542 cord_individual_obj[indivial_i,:] = [13. 7. 17. 24.]
543 cord_individual_obj[indivial_i,:] = [14. 5. 50. 55.]
544 cord_individual_obj[indivial_i,:] = [15. 5. 43. 48.]
545 cord_individual_obj[indivial_i,:] = [16. 8. 44. 52.]
546 cord_individual_obj[indivial_i,:] = [17. 6. 28. 34.]
547 cord_individual_obj[indivial_i,:] = [18. 5. 27. 32.]
548 cord_individual_obj[indivial_i,:] = [19. 6. 28. 34.]
549 cord_individual_obj[indivial_i,:] = [20. 8. 29. 37.]
550 cord_individual_obj[indivial_i,:] = [21. 7. 21. 28.]
551 cord_individual_obj[indivial_i,:] = [22. 6. 40. 46.]
552 cord_individual_obj[indivial_i,:] = [23. 8. 27. 35.]
553 cord_individual_obj[indivial_i,:] = [24. 7. 24. 31.]
554
555 min(cord_individual_obj[:,3]) = 24.0
556 histol_G_best_iter[iter,3] = 24.0
557 Begin iteration:
558
559 iter = 17
560 cord_individual_obj[indivial_i,:] = [ 0. 5. 38. 43.]
561 cord_individual_obj[indivial_i,:] = [ 1. 5. 88. 93.]
562 cord_individual_obj[indivial_i,:] = [ 2. 8. 29. 37.]
563 cord_individual_obj[indivial_i,:] = [ 3. 6. 69. 75.]
564 cord_individual_obj[indivial_i,:] = [ 4. 8. 34. 42.]
565 cord_individual_obj[indivial_i,:] = [ 5. 6. 51. 57.]
566 cord_individual_obj[indivial_i,:] = [ 6. 5. 73. 78.]
567 cord_individual_obj[indivial_i,:] = [ 7. 5. 29. 34.]
568 cord_individual_obj[indivial_i,:] = [ 8. 6. 126. 132.]
569 cord_individual_obj[indivial_i,:] = [ 9. 5. 24. 29.]
570 cord_individual_obj[indivial_i,:] = [10. 5. 61. 66.]
571 cord_individual_obj[indivial_i,:] = [11. 5. 19. 24.]
572 cord_individual_obj[indivial_i,:] = [12. 7. 59. 66.]
573 cord_individual_obj[indivial_i,:] = [13. 6. 33. 39.]
574 cord_individual_obj[indivial_i,:] = [14. 5. 38. 43.]
575 cord_individual_obj[indivial_i,:] = [15. 7. 50. 57.]
576 cord_individual_obj[indivial_i,:] = [16. 6. 61. 67.]
577 cord_individual_obj[indivial_i,:] = [17. 6. 74. 80.]
578 cord_individual_obj[indivial_i,:] = [18. 6. 86. 92.]
579 cord_individual_obj[indivial_i,:] = [19. 5. 80. 85.]
580 cord_individual_obj[indivial_i,:] = [20. 8. 40. 48.]
581 cord_individual_obj[indivial_i,:] = [21. 5. 80. 85.]
582 cord_individual_obj[indivial_i,:] = [22. 6. 36. 42.]
583 cord_individual_obj[indivial_i,:] = [23. 8. 42. 50.]

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584     cord_individual_obj[indivial_i, :] = [24. 7. 86. 93.]
585
586     min(cord_individual_obj[:, 3]) = 24.0
587     historl_G_best_iter[iter, 3] = 24.0
588 Begin iteration:
589
590 iter = 18
591     cord_individual_obj[indivial_i, :] = [ 0. 5. 100. 105.]
592     cord_individual_obj[indivial_i, :] = [ 1. 6. 91. 97.]
593     cord_individual_obj[indivial_i, :] = [ 2. 7. 29. 36.]
594     cord_individual_obj[indivial_i, :] = [ 3. 6. 20. 26.]
595     cord_individual_obj[indivial_i, :] = [ 4. 7. 102. 109.]
596     cord_individual_obj[indivial_i, :] = [ 5. 5. 46. 51.]
597     cord_individual_obj[indivial_i, :] = [ 6. 6. 77. 83.]
598     cord_individual_obj[indivial_i, :] = [ 7. 6. 38. 44.]
599     cord_individual_obj[indivial_i, :] = [ 8. 5. 19. 24.]
600     cord_individual_obj[indivial_i, :] = [ 9. 5. 28. 33.]
601     cord_individual_obj[indivial_i, :] = [10. 7. 41. 48.]
602     cord_individual_obj[indivial_i, :] = [11. 7. 72. 79.]
603     cord_individual_obj[indivial_i, :] = [12. 7. 118. 125.]
604     cord_individual_obj[indivial_i, :] = [13. 8. 62. 70.]
605     cord_individual_obj[indivial_i, :] = [14. 5. 50. 55.]
606     cord_individual_obj[indivial_i, :] = [15. 8. 47. 55.]
607     cord_individual_obj[indivial_i, :] = [16. 6. 57. 63.]
608     cord_individual_obj[indivial_i, :] = [17. 7. 39. 46.]
609     cord_individual_obj[indivial_i, :] = [18. 7. 52. 59.]
610     cord_individual_obj[indivial_i, :] = [19. 5. 96. 101.]
611     cord_individual_obj[indivial_i, :] = [20. 6. 37. 43.]
612     cord_individual_obj[indivial_i, :] = [21. 6. 39. 45.]
613     cord_individual_obj[indivial_i, :] = [22. 5. 42. 47.]
614     cord_individual_obj[indivial_i, :] = [23. 8. 42. 50.]
615     cord_individual_obj[indivial_i, :] = [24. 6. 99. 105.]
616
617     min(cord_individual_obj[:, 3]) = 24.0
618     historl_G_best_iter[iter, 3] = 24.0
619 Begin iteration:
620
621 iter = 19
622     cord_individual_obj[indivial_i, :] = [ 0. 5. 29. 34.]
623     cord_individual_obj[indivial_i, :] = [ 1. 7. 59. 66.]
624     cord_individual_obj[indivial_i, :] = [ 2. 4. 63. 67.]
625     cord_individual_obj[indivial_i, :] = [ 3. 5. 104. 109.]
626     cord_individual_obj[indivial_i, :] = [ 4. 6. 44. 50.]
627     cord_individual_obj[indivial_i, :] = [ 5. 5. 41. 46.]
628     cord_individual_obj[indivial_i, :] = [ 6. 5. 99. 104.]
629     cord_individual_obj[indivial_i, :] = [ 7. 6. 93. 99.]
630     cord_individual_obj[indivial_i, :] = [ 8. 6. 126. 132.]
631     cord_individual_obj[indivial_i, :] = [ 9. 5. 31. 36.]
632     cord_individual_obj[indivial_i, :] = [10. 6. 58. 64.]
633     cord_individual_obj[indivial_i, :] = [11. 6. 38. 44.]
634     cord_individual_obj[indivial_i, :] = [12. 5. 19. 24.]
635     cord_individual_obj[indivial_i, :] = [13. 8. 103. 111.]
636     cord_individual_obj[indivial_i, :] = [14. 6. 62. 68.]
637     cord_individual_obj[indivial_i, :] = [15. 7. 39. 46.]
638     cord_individual_obj[indivial_i, :] = [16. 5. 71. 76.]
639     cord_individual_obj[indivial_i, :] = [17. 6. 68. 74.]
640     cord_individual_obj[indivial_i, :] = [18. 5. 19. 24.]
641     cord_individual_obj[indivial_i, :] = [19. 6. 49. 55.]
642     cord_individual_obj[indivial_i, :] = [20. 5. 53. 58.]
643     cord_individual_obj[indivial_i, :] = [21. 5. 66. 71.]
644     cord_individual_obj[indivial_i, :] = [22. 4. 54. 58.]
645     cord_individual_obj[indivial_i, :] = [23. 6. 48. 54.]
646     cord_individual_obj[indivial_i, :] = [24. 6. 61. 67.]
647
648     min(cord_individual_obj[:, 3]) = 24.0
649     historl_G_best_iter[iter, 3] = 24.0
650 Begin iteration:
651
652 iter = 20
653     cord_individual_obj[indivial_i, :] = [ 0. 4. 56. 60.]
654     cord_individual_obj[indivial_i, :] = [ 1. 6. 94. 100.]
655     cord_individual_obj[indivial_i, :] = [ 2. 7. 59. 66.]
656     cord_individual_obj[indivial_i, :] = [ 3. 6. 46. 52.]
657     cord_individual_obj[indivial_i, :] = [ 4. 6. 84. 90.]
658     cord_individual_obj[indivial_i, :] = [ 5. 5. 48. 53.]
659     cord_individual_obj[indivial_i, :] = [ 6. 5. 83. 88.]
660     cord_individual_obj[indivial_i, :] = [ 7. 5. 28. 33.]
661     cord_individual_obj[indivial_i, :] = [ 8. 5. 19. 24.]
662     cord_individual_obj[indivial_i, :] = [ 9. 5. 40. 45.]
663     cord_individual_obj[indivial_i, :] = [10. 6. 34. 40.]
664     cord_individual_obj[indivial_i, :] = [11. 9. 110. 119.]
665     cord_individual_obj[indivial_i, :] = [12. 7. 59. 66.]
666     cord_individual_obj[indivial_i, :] = [13. 6. 39. 45.]
667     cord_individual_obj[indivial_i, :] = [14. 5. 48. 53.]

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668 cord_individual_obj[indivial_i,:] = [15. 8. 30. 38.]
669 cord_individual_obj[indivial_i,:] = [16. 6. 81. 87.]
670 cord_individual_obj[indivial_i,:] = [17. 8. 61. 69.]
671 cord_individual_obj[indivial_i,:] = [18. 6. 51. 57.]
672 cord_individual_obj[indivial_i,:] = [19. 4. 95. 99.]
673 cord_individual_obj[indivial_i,:] = [20. 8. 37. 45.]
674 cord_individual_obj[indivial_i,:] = [21. 5. 104. 109.]
675 cord_individual_obj[indivial_i,:] = [22. 5. 103. 108.]
676 cord_individual_obj[indivial_i,:] = [23. 6. 70. 76.]
677 cord_individual_obj[indivial_i,:] = [24. 5. 35. 40.]
678
679 min(cord_individual_obj[:, 3]) = 24.0
680 historl_G_best_iter[iter, 3] = 24.0
681 Iteration calculate over
682
683
684
685
686 All item are in Bin and:
687 Bin area = 1080
688 Real_area = 139.0
689 Proportion_of_area = 0.1287037037037037
690 BEST_CHROM =
691 berth: [13. 9.5 13.5 14.5 21.5 4. 20. 6. 2. 22.5 4.5]
692 time: [4. 0. 1. 0. 4. 2. 2. 0. 0. 0. 3.]
693 num_QC: [4. 1. 4. 4. 5. 3. 4. 3. 3. 3. 2.]
694 Objective function values and some other indicators:
695 Obj0 = 5.00          Obj1 = 19.00          Obj0 + Obj1 = 24.00
696 Total movement of crane: 0.00
697 Total waiting time in berth position: 16.00
698 Total index of q during berthing: 543.00
699 Specific arrangement for each vessel:
700 V_id: 0           li: 8.0           xi: 13.0           bow of i: 9.0           tail of i: 17.0           gama_i0: 4.0           gama_i1: 5
701 .0               gama_i1 + 1: 6.0       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
702 V_id: 1           li: 3.0           xi: 9.5           bow of i: 8.0           tail of i: 11.0           gama_i0: 0.0           gama_i1: 2.0
703 .0               gama_i1 + 1: 3.0       gama_i1 - gama_i0: 2.0       duration_time_i: 3.0       demand_i: 60.0       work load_i:
60.0               work load gap_i: 0
704 V_id: 2           li: 5.0           xi: 13.5           bow of i: 11.0           tail of i: 16.0           gama_i0: 1.0           gama_i1: 2
705 .0               gama_i1 + 1: 3.0       gama_i1 - gama_i0: 1.0       duration_time_i: 2.0       demand_i: 160.0       work
load_i: 160.0       work load gap_i: 0
706 V_id: 3           li: 7.0           xi: 14.5           bow of i: 11.0           tail of i: 18.0           gama_i0: 0.0           gama_i1: 0
707 .0               gama_i1 + 1: 1.0       gama_i1 - gama_i0: 0.0       duration_time_i: 1.0       demand_i: 60.0       work
load_i: 60.0       work load gap_i: 0
708 V_id: 4           li: 9.0           xi: 21.5           bow of i: 17.0           tail of i: 26.0           gama_i0: 4.0           gama_i1: 4
709 .0               gama_i1 + 1: 5.0       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
710 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
711 .0               gama_i1 + 1: 3.0       gama_i1 - gama_i0: 0.0       duration_time_i: 1.0       demand_i: 60.0       work load_i:
60.0               work load gap_i: 0
712 V_id: 6           li: 8.0           xi: 20.0           bow of i: 16.0           tail of i: 24.0           gama_i0: 2.0           gama_i1: 3
713 .0               gama_i1 + 1: 4.0       gama_i1 - gama_i0: 1.0       duration_time_i: 2.0       demand_i: 120.0       work
load_i: 120.0       work load gap_i: 0
714 V_id: 7           li: 4.0           xi: 6.0           bow of i: 4.0           tail of i: 8.0           gama_i0: 0.0           gama_i1: 1
715 .0               gama_i1 + 1: 2.0       gama_i1 - gama_i0: 1.0       duration_time_i: 2.0       demand_i: 120.0       work load_i:
120.0              work load gap_i: 0
716 V_id: 8           li: 4.0           xi: 2.0           bow of i: 0.0           tail of i: 4.0           gama_i0: 0.0           gama_i1: 1
717 .0               gama_i1 + 1: 2.0       gama_i1 - gama_i0: 1.0       duration_time_i: 2.0       demand_i: 80.0       work load_i:
80.0               work load gap_i: 0
718 V_id: 9           li: 9.0           xi: 22.5           bow of i: 18.0           tail of i: 27.0           gama_i0: 0.0           gama_i1: 1
719 .0               gama_i1 + 1: 2.0       gama_i1 - gama_i0: 1.0       duration_time_i: 2.0       demand_i: 80.0       work
load_i: 80.0       work load gap_i: 0
720 V_id: 10          li: 9.0           xi: 4.5           bow of i: 0.0           tail of i: 9.0           gama_i0: 3.0           gama_i1: 4
721 .0               gama_i1 + 1: 5.0       gama_i1 - gama_i0: 1.0       duration_time_i: 2.0       demand_i: 80.0       work load_i:
80.0               work load gap_i: 0
722
723 Algorithm finished and the total CPU time: 298 s
724 End

```