

unknown

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80 cord_individual_obj[indivial_i,:] = [16. 10. 61. 71.]
81 cord_individual_obj[indivial_i,:] = [17. 9. 102. 111.]
82 cord_individual_obj[indivial_i,:] = [18. 10. 173. 183.]
83 cord_individual_obj[indivial_i,:] = [19. 11. 131. 142.]
84 cord_individual_obj[indivial_i,:] = [20. 8. 89. 97.]
85 cord_individual_obj[indivial_i,:] = [21. 10. 60. 70.]
86 cord_individual_obj[indivial_i,:] = [22. 9. 160. 169.]
87 cord_individual_obj[indivial_i,:] = [23. 8. 105. 113.]
88 cord_individual_obj[indivial_i,:] = [24. 9. 137. 146.]
89
90 min(cord_individual_obj[:,3]) = 70.0
91 historl_G_best_iter[iter,3] = 70.0
92 Begin iteration:
93
94 iter = 2
95 cord_individual_obj[indivial_i,:] = [0. 9. 81. 90.]
96 cord_individual_obj[indivial_i,:] = [1. 10. 68. 78.]
97 cord_individual_obj[indivial_i,:] = [2. 10. 60. 70.]
98 cord_individual_obj[indivial_i,:] = [3. 7. 135. 142.]
99 cord_individual_obj[indivial_i,:] = [4. 8. 69. 77.]
100 cord_individual_obj[indivial_i,:] = [5. 10. 102. 112.]
101 cord_individual_obj[indivial_i,:] = [6. 9. 136. 145.]
102 cord_individual_obj[indivial_i,:] = [7. 9. 115. 124.]
103 cord_individual_obj[indivial_i,:] = [8. 8. 81. 89.]
104 cord_individual_obj[indivial_i,:] = [9. 10. 119. 129.]
105 cord_individual_obj[indivial_i,:] = [10. 10. 107. 117.]
106 cord_individual_obj[indivial_i,:] = [11. 9. 115. 124.]
107 cord_individual_obj[indivial_i,:] = [12. 8. 74. 82.]
108 cord_individual_obj[indivial_i,:] = [13. 9. 86. 95.]
109 cord_individual_obj[indivial_i,:] = [14. 8. 112. 120.]
110 cord_individual_obj[indivial_i,:] = [15. 8. 115. 123.]
111 cord_individual_obj[indivial_i,:] = [16. 11. 89. 100.]
112 cord_individual_obj[indivial_i,:] = [17. 7. 129. 136.]
113 cord_individual_obj[indivial_i,:] = [18. 9. 130. 139.]
114 cord_individual_obj[indivial_i,:] = [19. 9. 94. 103.]
115 cord_individual_obj[indivial_i,:] = [20. 9. 122. 131.]
116 cord_individual_obj[indivial_i,:] = [21. 10. 99. 109.]
117 cord_individual_obj[indivial_i,:] = [22. 9. 70. 79.]
118 cord_individual_obj[indivial_i,:] = [23. 8. 76. 84.]
119 cord_individual_obj[indivial_i,:] = [24. 10. 88. 98.]
120
121 min(cord_individual_obj[:,3]) = 70.0
122 historl_G_best_iter[iter,3] = 70.0
123 Begin iteration:
124
125 iter = 3
126 cord_individual_obj[indivial_i,:] = [0. 9. 109. 118.]
127 cord_individual_obj[indivial_i,:] = [1. 9. 104. 113.]
128 cord_individual_obj[indivial_i,:] = [2. 9. 113. 122.]
129 cord_individual_obj[indivial_i,:] = [3. 10. 121. 131.]
130 cord_individual_obj[indivial_i,:] = [4. 9. 126. 135.]
131 cord_individual_obj[indivial_i,:] = [5. 8. 162. 170.]
132 cord_individual_obj[indivial_i,:] = [6. 10. 60. 70.]
133 cord_individual_obj[indivial_i,:] = [7. 9. 148. 157.]
134 cord_individual_obj[indivial_i,:] = [8. 7. 131. 138.]
135 cord_individual_obj[indivial_i,:] = [9. 10. 125. 135.]
136 cord_individual_obj[indivial_i,:] = [10. 10. 99. 109.]
137 cord_individual_obj[indivial_i,:] = [11. 10. 138. 148.]
138 cord_individual_obj[indivial_i,:] = [12. 9. 119. 128.]
139 cord_individual_obj[indivial_i,:] = [13. 11. 92. 103.]
140 cord_individual_obj[indivial_i,:] = [14. 8. 121. 129.]
141 cord_individual_obj[indivial_i,:] = [15. 9. 115. 124.]
142 cord_individual_obj[indivial_i,:] = [16. 9. 91. 100.]
143 cord_individual_obj[indivial_i,:] = [17. 9. 106. 115.]
144 cord_individual_obj[indivial_i,:] = [18. 11. 125. 136.]
145 cord_individual_obj[indivial_i,:] = [19. 9. 127. 136.]
146 cord_individual_obj[indivial_i,:] = [20. 10. 81. 91.]
147 cord_individual_obj[indivial_i,:] = [21. 9. 104. 113.]
148 cord_individual_obj[indivial_i,:] = [22. 10. 108. 118.]
149 cord_individual_obj[indivial_i,:] = [23. 8. 94. 102.]
150 cord_individual_obj[indivial_i,:] = [24. 8. 99. 107.]
151
152 min(cord_individual_obj[:,3]) = 70.0
153 historl_G_best_iter[iter,3] = 70.0
154 Begin iteration:
155
156 iter = 4
157 cord_individual_obj[indivial_i,:] = [0. 9. 90. 99.]
158 cord_individual_obj[indivial_i,:] = [1. 9. 90. 99.]
159 cord_individual_obj[indivial_i,:] = [2. 8. 129. 137.]
160 cord_individual_obj[indivial_i,:] = [3. 8. 94. 102.]
161 cord_individual_obj[indivial_i,:] = [4. 10. 94. 104.]
162 cord_individual_obj[indivial_i,:] = [5. 10. 60. 70.]
163 cord_individual_obj[indivial_i,:] = [6. 10. 109. 119.]

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164 cord_individual_obj[indivial_i,:] = [ 7. 8. 81. 89.]
165 cord_individual_obj[indivial_i,:] = [ 8. 8. 102. 110.]
166 cord_individual_obj[indivial_i,:] = [ 9. 10. 97. 107.]
167 cord_individual_obj[indivial_i,:] = [10. 8. 73. 81.]
168 cord_individual_obj[indivial_i,:] = [11. 8. 83. 91.]
169 cord_individual_obj[indivial_i,:] = [12. 9. 72. 81.]
170 cord_individual_obj[indivial_i,:] = [13. 10. 93. 103.]
171 cord_individual_obj[indivial_i,:] = [14. 8. 62. 70.]
172 cord_individual_obj[indivial_i,:] = [15. 9. 105. 114.]
173 cord_individual_obj[indivial_i,:] = [16. 9. 70. 79.]
174 cord_individual_obj[indivial_i,:] = [17. 7. 72. 79.]
175 cord_individual_obj[indivial_i,:] = [18. 7. 143. 150.]
176 cord_individual_obj[indivial_i,:] = [19. 8. 120. 128.]
177 cord_individual_obj[indivial_i,:] = [20. 7. 66. 73.]
178 cord_individual_obj[indivial_i,:] = [21. 9. 83. 92.]
179 cord_individual_obj[indivial_i,:] = [22. 8. 129. 137.]
180 cord_individual_obj[indivial_i,:] = [23. 9. 91. 100.]
181 cord_individual_obj[indivial_i,:] = [24. 9. 74. 83.]
182
183 min(cord_individual_obj[:,3]) = 70.0
184 historl_G_best_iter[iter,3] = 70.0
185 Begin iteration:
186
187 iter = 5
188 cord_individual_obj[indivial_i,:] = [ 0. 8. 84. 92.]
189 cord_individual_obj[indivial_i,:] = [ 1. 13. 99. 112.]
190 cord_individual_obj[indivial_i,:] = [ 2. 13. 120. 133.]
191 cord_individual_obj[indivial_i,:] = [ 3. 9. 83. 92.]
192 cord_individual_obj[indivial_i,:] = [ 4. 7. 121. 128.]
193 cord_individual_obj[indivial_i,:] = [ 5. 9. 146. 155.]
194 cord_individual_obj[indivial_i,:] = [ 6. 10. 95. 105.]
195 cord_individual_obj[indivial_i,:] = [ 7. 10. 92. 102.]
196 cord_individual_obj[indivial_i,:] = [ 8. 10. 162. 172.]
197 cord_individual_obj[indivial_i,:] = [ 9. 11. 139. 150.]
198 cord_individual_obj[indivial_i,:] = [10. 8. 81. 89.]
199 cord_individual_obj[indivial_i,:] = [11. 9. 79. 88.]
200 cord_individual_obj[indivial_i,:] = [12. 7. 113. 120.]
201 cord_individual_obj[indivial_i,:] = [13. 9. 86. 95.]
202 cord_individual_obj[indivial_i,:] = [14. 10. 85. 95.]
203 cord_individual_obj[indivial_i,:] = [15. 11. 67. 78.]
204 cord_individual_obj[indivial_i,:] = [16. 10. 46. 56.]
205 cord_individual_obj[indivial_i,:] = [17. 11. 151. 162.]
206 cord_individual_obj[indivial_i,:] = [18. 10. 60. 70.]
207 cord_individual_obj[indivial_i,:] = [19. 10. 70. 80.]
208 cord_individual_obj[indivial_i,:] = [20. 9. 116. 125.]
209 cord_individual_obj[indivial_i,:] = [21. 10. 69. 79.]
210 cord_individual_obj[indivial_i,:] = [22. 8. 103. 111.]
211 cord_individual_obj[indivial_i,:] = [23. 9. 80. 89.]
212 cord_individual_obj[indivial_i,:] = [24. 10. 97. 107.]
213
214 min(cord_individual_obj[:,3]) = 56.0
215 historl_G_best_iter[iter,3] = 56.0
216 Begin iteration:
217
218 iter = 6
219 cord_individual_obj[indivial_i,:] = [ 0. 8. 90. 98.]
220 cord_individual_obj[indivial_i,:] = [ 1. 10. 115. 125.]
221 cord_individual_obj[indivial_i,:] = [ 2. 10. 113. 123.]
222 cord_individual_obj[indivial_i,:] = [ 3. 11. 125. 136.]
223 cord_individual_obj[indivial_i,:] = [ 4. 11. 106. 117.]
224 cord_individual_obj[indivial_i,:] = [ 5. 8. 129. 137.]
225 cord_individual_obj[indivial_i,:] = [ 6. 11. 112. 123.]
226 cord_individual_obj[indivial_i,:] = [ 7. 10. 75. 85.]
227 cord_individual_obj[indivial_i,:] = [ 8. 10. 46. 56.]
228 cord_individual_obj[indivial_i,:] = [ 9. 8. 86. 94.]
229 cord_individual_obj[indivial_i,:] = [10. 10. 103. 113.]
230 cord_individual_obj[indivial_i,:] = [11. 12. 106. 118.]
231 cord_individual_obj[indivial_i,:] = [12. 7. 64. 71.]
232 cord_individual_obj[indivial_i,:] = [13. 11. 136. 147.]
233 cord_individual_obj[indivial_i,:] = [14. 8. 113. 121.]
234 cord_individual_obj[indivial_i,:] = [15. 8. 93. 101.]
235 cord_individual_obj[indivial_i,:] = [16. 10. 92. 102.]
236 cord_individual_obj[indivial_i,:] = [17. 11. 62. 73.]
237 cord_individual_obj[indivial_i,:] = [18. 9. 130. 139.]
238 cord_individual_obj[indivial_i,:] = [19. 8. 82. 90.]
239 cord_individual_obj[indivial_i,:] = [20. 9. 93. 102.]
240 cord_individual_obj[indivial_i,:] = [21. 8. 102. 110.]
241 cord_individual_obj[indivial_i,:] = [22. 7. 81. 88.]
242 cord_individual_obj[indivial_i,:] = [23. 8. 86. 94.]
243 cord_individual_obj[indivial_i,:] = [24. 9. 119. 128.]
244
245 min(cord_individual_obj[:,3]) = 56.0
246 historl_G_best_iter[iter,3] = 56.0
247 Begin iteration:

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248
249 iter = 7
250 cord_individual_obj[indivial_i, :] = [ 0.  9. 113. 122.]
251 cord_individual_obj[indivial_i, :] = [ 1. 10. 97. 107.]
252 cord_individual_obj[indivial_i, :] = [ 2. 9. 87. 96.]
253 cord_individual_obj[indivial_i, :] = [ 3. 8. 72. 80.]
254 cord_individual_obj[indivial_i, :] = [ 4. 10. 71. 81.]
255 cord_individual_obj[indivial_i, :] = [ 5. 9. 71. 80.]
256 cord_individual_obj[indivial_i, :] = [ 6. 11. 92. 103.]
257 cord_individual_obj[indivial_i, :] = [ 7. 10. 127. 137.]
258 cord_individual_obj[indivial_i, :] = [ 8. 8. 79. 87.]
259 cord_individual_obj[indivial_i, :] = [ 9. 7. 116. 123.]
260 cord_individual_obj[indivial_i, :] = [10. 10. 136. 146.]
261 cord_individual_obj[indivial_i, :] = [11. 11. 161. 172.]
262 cord_individual_obj[indivial_i, :] = [12. 8. 111. 119.]
263 cord_individual_obj[indivial_i, :] = [13. 10. 46. 56.]
264 cord_individual_obj[indivial_i, :] = [14. 10. 88. 98.]
265 cord_individual_obj[indivial_i, :] = [15. 9. 108. 117.]
266 cord_individual_obj[indivial_i, :] = [16. 10. 87. 97.]
267 cord_individual_obj[indivial_i, :] = [17. 10. 114. 124.]
268 cord_individual_obj[indivial_i, :] = [18. 10. 111. 121.]
269 cord_individual_obj[indivial_i, :] = [19. 9. 139. 148.]
270 cord_individual_obj[indivial_i, :] = [20. 9. 57. 66.]
271 cord_individual_obj[indivial_i, :] = [21. 9. 134. 143.]
272 cord_individual_obj[indivial_i, :] = [22. 10. 78. 88.]
273 cord_individual_obj[indivial_i, :] = [23. 9. 125. 134.]
274 cord_individual_obj[indivial_i, :] = [24. 10. 149. 159.]
275

276 min(cord_individual_obj[:, 3]) = 56.0
277 historl_G_best_iter[iter, 3] = 56.0
278 Begin iteration:
279
280 iter = 8
281 cord_individual_obj[indivial_i, :] = [ 0.  8. 104. 112.]
282 cord_individual_obj[indivial_i, :] = [ 1. 9. 105. 114.]
283 cord_individual_obj[indivial_i, :] = [ 2. 10. 89. 99.]
284 cord_individual_obj[indivial_i, :] = [ 3. 10. 98. 108.]
285 cord_individual_obj[indivial_i, :] = [ 4. 10. 128. 138.]
286 cord_individual_obj[indivial_i, :] = [ 5. 9. 78. 87.]
287 cord_individual_obj[indivial_i, :] = [ 6. 12. 73. 85.]
288 cord_individual_obj[indivial_i, :] = [ 7. 10. 67. 77.]
289 cord_individual_obj[indivial_i, :] = [ 8. 8. 79. 87.]
290 cord_individual_obj[indivial_i, :] = [ 9. 9. 108. 117.]
291 cord_individual_obj[indivial_i, :] = [10. 8. 112. 120.]
292 cord_individual_obj[indivial_i, :] = [11. 10. 46. 56.]
293 cord_individual_obj[indivial_i, :] = [12. 7. 112. 119.]
294 cord_individual_obj[indivial_i, :] = [13. 10. 113. 123.]
295 cord_individual_obj[indivial_i, :] = [14. 10. 140. 150.]
296 cord_individual_obj[indivial_i, :] = [15. 8. 99. 107.]
297 cord_individual_obj[indivial_i, :] = [16. 9. 100. 109.]
298 cord_individual_obj[indivial_i, :] = [17. 8. 105. 113.]
299 cord_individual_obj[indivial_i, :] = [18. 10. 63. 73.]
300 cord_individual_obj[indivial_i, :] = [19. 8. 107. 115.]
301 cord_individual_obj[indivial_i, :] = [20. 10. 79. 89.]
302 cord_individual_obj[indivial_i, :] = [21. 10. 117. 127.]
303 cord_individual_obj[indivial_i, :] = [22. 7. 89. 96.]
304 cord_individual_obj[indivial_i, :] = [23. 9. 102. 111.]
305 cord_individual_obj[indivial_i, :] = [24. 13. 107. 120.]
306

307 min(cord_individual_obj[:, 3]) = 56.0
308 historl_G_best_iter[iter, 3] = 56.0
309 Begin iteration:
310
311 iter = 9
312 cord_individual_obj[indivial_i, :] = [ 0.  7. 77. 84.]
313 cord_individual_obj[indivial_i, :] = [ 1. 10. 99. 109.]
314 cord_individual_obj[indivial_i, :] = [ 2. 9. 60. 69.]
315 cord_individual_obj[indivial_i, :] = [ 3. 8. 78. 86.]
316 cord_individual_obj[indivial_i, :] = [ 4. 9. 116. 125.]
317 cord_individual_obj[indivial_i, :] = [ 5. 11. 88. 99.]
318 cord_individual_obj[indivial_i, :] = [ 6. 9. 122. 131.]
319 cord_individual_obj[indivial_i, :] = [ 7. 9. 72. 81.]
320 cord_individual_obj[indivial_i, :] = [ 8. 8. 84. 92.]
321 cord_individual_obj[indivial_i, :] = [ 9. 10. 69. 79.]
322 cord_individual_obj[indivial_i, :] = [10. 7. 123. 130.]
323 cord_individual_obj[indivial_i, :] = [11. 10. 71. 81.]
324 cord_individual_obj[indivial_i, :] = [12. 9. 137. 146.]
325 cord_individual_obj[indivial_i, :] = [13. 9. 85. 94.]
326 cord_individual_obj[indivial_i, :] = [14. 10. 46. 56.]
327 cord_individual_obj[indivial_i, :] = [15. 9. 57. 66.]
328 cord_individual_obj[indivial_i, :] = [16. 9. 110. 119.]
329 cord_individual_obj[indivial_i, :] = [17. 9. 112. 121.]
330 cord_individual_obj[indivial_i, :] = [18. 9. 85. 94.]
331 cord_individual_obj[indivial_i, :] = [19. 10. 94. 104.]

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332     cord_individual_obj[indivial_i, :] = [ 20. 9. 133. 142.]
333     cord_individual_obj[indivial_i, :] = [ 21. 9. 109. 118.]
334     cord_individual_obj[indivial_i, :] = [ 22. 8. 62. 70.]
335     cord_individual_obj[indivial_i, :] = [ 23. 9. 111. 120.]
336     cord_individual_obj[indivial_i, :] = [ 24. 9. 102. 111.]
337
338 min(cord_individual_obj[:, 3]) = 56.0
339 histol_G_best_iter[iter, 3] = 56.0
340 Begin iteration:
341
342 iter = 10
343     cord_individual_obj[indivial_i, :] = [ 0. 11. 112. 123.]
344     cord_individual_obj[indivial_i, :] = [ 1. 9. 119. 128.]
345     cord_individual_obj[indivial_i, :] = [ 2. 8. 86. 94.]
346     cord_individual_obj[indivial_i, :] = [ 3. 11. 118. 129.]
347     cord_individual_obj[indivial_i, :] = [ 4. 11. 96. 107.]
348     cord_individual_obj[indivial_i, :] = [ 5. 8. 85. 93.]
349     cord_individual_obj[indivial_i, :] = [ 6. 10. 84. 94.]
350     cord_individual_obj[indivial_i, :] = [ 7. 10. 130. 140.]
351     cord_individual_obj[indivial_i, :] = [ 8. 8. 59. 67.]
352     cord_individual_obj[indivial_i, :] = [ 9. 7. 153. 160.]
353     cord_individual_obj[indivial_i, :] = [ 10. 9. 114. 123.]
354     cord_individual_obj[indivial_i, :] = [ 11. 9. 72. 81.]
355     cord_individual_obj[indivial_i, :] = [ 12. 10. 46. 56.]
356     cord_individual_obj[indivial_i, :] = [ 13. 9. 150. 159.]
357     cord_individual_obj[indivial_i, :] = [ 14. 10. 81. 91.]
358     cord_individual_obj[indivial_i, :] = [ 15. 8. 47. 55.]
359     cord_individual_obj[indivial_i, :] = [ 16. 11. 102. 113.]
360     cord_individual_obj[indivial_i, :] = [ 17. 10. 143. 153.]
361     cord_individual_obj[indivial_i, :] = [ 18. 9. 103. 112.]
362     cord_individual_obj[indivial_i, :] = [ 19. 9. 62. 71.]
363     cord_individual_obj[indivial_i, :] = [ 20. 13. 94. 107.]
364     cord_individual_obj[indivial_i, :] = [ 21. 7. 68. 75.]
365     cord_individual_obj[indivial_i, :] = [ 22. 9. 93. 102.]
366     cord_individual_obj[indivial_i, :] = [ 23. 11. 112. 123.]
367     cord_individual_obj[indivial_i, :] = [ 24. 8. 83. 91.]
368
369 min(cord_individual_obj[:, 3]) = 55.0
370 histol_G_best_iter[iter, 3] = 55.0
371 Begin iteration:
372
373 iter = 11
374     cord_individual_obj[indivial_i, :] = [ 0. 10. 83. 93.]
375     cord_individual_obj[indivial_i, :] = [ 1. 8. 97. 105.]
376     cord_individual_obj[indivial_i, :] = [ 2. 10. 84. 94.]
377     cord_individual_obj[indivial_i, :] = [ 3. 9. 136. 145.]
378     cord_individual_obj[indivial_i, :] = [ 4. 10. 92. 102.]
379     cord_individual_obj[indivial_i, :] = [ 5. 10. 69. 79.]
380     cord_individual_obj[indivial_i, :] = [ 6. 10. 102. 112.]
381     cord_individual_obj[indivial_i, :] = [ 7. 10. 135. 145.]
382     cord_individual_obj[indivial_i, :] = [ 8. 10. 93. 103.]
383     cord_individual_obj[indivial_i, :] = [ 9. 8. 47. 55.]
384     cord_individual_obj[indivial_i, :] = [ 10. 9. 84. 93.]
385     cord_individual_obj[indivial_i, :] = [ 11. 9. 86. 95.]
386     cord_individual_obj[indivial_i, :] = [ 12. 7. 92. 99.]
387     cord_individual_obj[indivial_i, :] = [ 13. 10. 140. 150.]
388     cord_individual_obj[indivial_i, :] = [ 14. 12. 106. 118.]
389     cord_individual_obj[indivial_i, :] = [ 15. 8. 103. 111.]
390     cord_individual_obj[indivial_i, :] = [ 16. 10. 65. 75.]
391     cord_individual_obj[indivial_i, :] = [ 17. 9. 106. 115.]
392     cord_individual_obj[indivial_i, :] = [ 18. 10. 92. 102.]
393     cord_individual_obj[indivial_i, :] = [ 19. 9. 110. 119.]
394     cord_individual_obj[indivial_i, :] = [ 20. 10. 94. 104.]
395     cord_individual_obj[indivial_i, :] = [ 21. 10. 89. 99.]
396     cord_individual_obj[indivial_i, :] = [ 22. 8. 107. 115.]
397     cord_individual_obj[indivial_i, :] = [ 23. 9. 90. 99.]
398     cord_individual_obj[indivial_i, :] = [ 24. 9. 88. 97.]
399
400 min(cord_individual_obj[:, 3]) = 55.0
401 histol_G_best_iter[iter, 3] = 55.0
402 Begin iteration:
403
404 iter = 12
405     cord_individual_obj[indivial_i, :] = [ 0. 10. 71. 81.]
406     cord_individual_obj[indivial_i, :] = [ 1. 11. 117. 128.]
407     cord_individual_obj[indivial_i, :] = [ 2. 10. 125. 135.]
408     cord_individual_obj[indivial_i, :] = [ 3. 10. 104. 114.]
409     cord_individual_obj[indivial_i, :] = [ 4. 11. 135. 146.]
410     cord_individual_obj[indivial_i, :] = [ 5. 9. 105. 114.]
411     cord_individual_obj[indivial_i, :] = [ 6. 9. 100. 109.]
412     cord_individual_obj[indivial_i, :] = [ 7. 10. 111. 121.]
413     cord_individual_obj[indivial_i, :] = [ 8. 8. 105. 113.]
414     cord_individual_obj[indivial_i, :] = [ 9. 9. 158. 167.]
415     cord_individual_obj[indivial_i, :] = [ 10. 10. 183. 193.]

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416 cord_individual_obj[indivial_i,:] = [ 11. 9. 119. 128.]
417 cord_individual_obj[indivial_i,:] = [12. 8. 81. 89.]
418 cord_individual_obj[indivial_i,:] = [13. 8. 47. 55.]
419 cord_individual_obj[indivial_i,:] = [ 14. 9. 105. 114.]
420 cord_individual_obj[indivial_i,:] = [ 15. 10. 94. 104.]
421 cord_individual_obj[indivial_i,:] = [ 16. 9. 123. 132.]
422 cord_individual_obj[indivial_i,:] = [17. 8. 69. 77.]
423 cord_individual_obj[indivial_i,:] = [ 18. 8. 119. 127.]
424 cord_individual_obj[indivial_i,:] = [19. 9. 56. 65.]
425 cord_individual_obj[indivial_i,:] = [ 20. 9. 93. 102.]
426 cord_individual_obj[indivial_i,:] = [ 21. 8. 103. 111.]
427 cord_individual_obj[indivial_i,:] = [22. 10. 77. 87.]
428 cord_individual_obj[indivial_i,:] = [23. 10. 84. 94.]
429 cord_individual_obj[indivial_i,:] = [ 24. 9. 106. 115.]
430
431 min(cord_individual_obj[:,3]) = 55.0
432 histol_G_best_iter[iter,3] = 55.0
433 Begin iteration:
434
435 iter = 13
436 cord_individual_obj[indivial_i,:] = [ 0. 9. 94. 103.]
437 cord_individual_obj[indivial_i,:] = [ 1. 9. 126. 135.]
438 cord_individual_obj[indivial_i,:] = [ 2. 9. 109. 118.]
439 cord_individual_obj[indivial_i,:] = [ 3. 9. 101. 110.]
440 cord_individual_obj[indivial_i,:] = [ 4. 9. 93. 102.]
441 cord_individual_obj[indivial_i,:] = [ 5. 9. 99. 108.]
442 cord_individual_obj[indivial_i,:] = [ 6. 8. 91. 99.]
443 cord_individual_obj[indivial_i,:] = [ 7. 10. 108. 118.]
444 cord_individual_obj[indivial_i,:] = [ 8. 8. 72. 80.]
445 cord_individual_obj[indivial_i,:] = [ 9. 10. 192. 202.]
446 cord_individual_obj[indivial_i,:] = [10. 8. 47. 55.]
447 cord_individual_obj[indivial_i,:] = [11. 10. 89. 99.]
448 cord_individual_obj[indivial_i,:] = [12. 9. 131. 140.]
449 cord_individual_obj[indivial_i,:] = [13. 10. 99. 109.]
450 cord_individual_obj[indivial_i,:] = [14. 10. 149. 159.]
451 cord_individual_obj[indivial_i,:] = [15. 8. 87. 95.]
452 cord_individual_obj[indivial_i,:] = [16. 9. 72. 81.]
453 cord_individual_obj[indivial_i,:] = [17. 9. 118. 127.]
454 cord_individual_obj[indivial_i,:] = [18. 8. 114. 122.]
455 cord_individual_obj[indivial_i,:] = [19. 9. 65. 74.]
456 cord_individual_obj[indivial_i,:] = [20. 9. 67. 76.]
457 cord_individual_obj[indivial_i,:] = [21. 9. 84. 93.]
458 cord_individual_obj[indivial_i,:] = [22. 9. 87. 96.]
459 cord_individual_obj[indivial_i,:] = [23. 10. 128. 138.]
460 cord_individual_obj[indivial_i,:] = [24. 8. 77. 85.]
461
462 min(cord_individual_obj[:,3]) = 55.0
463 histol_G_best_iter[iter,3] = 55.0
464 Begin iteration:
465
466 iter = 14
467 cord_individual_obj[indivial_i,:] = [ 0. 8. 71. 79.]
468 cord_individual_obj[indivial_i,:] = [ 1. 9. 147. 156.]
469 cord_individual_obj[indivial_i,:] = [ 2. 9. 114. 123.]
470 cord_individual_obj[indivial_i,:] = [ 3. 8. 107. 115.]
471 cord_individual_obj[indivial_i,:] = [ 4. 9. 96. 105.]
472 cord_individual_obj[indivial_i,:] = [ 5. 8. 118. 126.]
473 cord_individual_obj[indivial_i,:] = [ 6. 12. 121. 133.]
474 cord_individual_obj[indivial_i,:] = [ 7. 10. 98. 108.]
475 cord_individual_obj[indivial_i,:] = [ 8. 11. 85. 96.]
476 cord_individual_obj[indivial_i,:] = [ 9. 8. 47. 55.]
477 cord_individual_obj[indivial_i,:] = [10. 8. 100. 108.]
478 cord_individual_obj[indivial_i,:] = [11. 10. 179. 189.]
479 cord_individual_obj[indivial_i,:] = [12. 8. 126. 134.]
480 cord_individual_obj[indivial_i,:] = [13. 10. 134. 144.]
481 cord_individual_obj[indivial_i,:] = [14. 8. 118. 126.]
482 cord_individual_obj[indivial_i,:] = [15. 8. 85. 93.]
483 cord_individual_obj[indivial_i,:] = [16. 8. 100. 108.]
484 cord_individual_obj[indivial_i,:] = [17. 8. 106. 114.]
485 cord_individual_obj[indivial_i,:] = [18. 7. 72. 79.]
486 cord_individual_obj[indivial_i,:] = [19. 8. 116. 124.]
487 cord_individual_obj[indivial_i,:] = [20. 9. 116. 125.]
488 cord_individual_obj[indivial_i,:] = [21. 7. 99. 106.]
489 cord_individual_obj[indivial_i,:] = [22. 7. 127. 134.]
490 cord_individual_obj[indivial_i,:] = [23. 8. 83. 91.]
491 cord_individual_obj[indivial_i,:] = [24. 8. 122. 130.]
492
493 min(cord_individual_obj[:,3]) = 55.0
494 histol_G_best_iter[iter,3] = 55.0
495 Begin iteration:
496
497 iter = 15
498 cord_individual_obj[indivial_i,:] = [ 0. 10. 98. 108.]
499 cord_individual_obj[indivial_i,:] = [ 1. 9. 127. 136.]

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500 cord_individual_obj[indivial_i, :] = [ 2. 10. 112. 122.]
501 cord_individual_obj[indivial_i, :] = [ 3. 7. 111. 118.]
502 cord_individual_obj[indivial_i, :] = [ 4. 10. 91. 101.]
503 cord_individual_obj[indivial_i, :] = [ 5. 11. 126. 137.]
504 cord_individual_obj[indivial_i, :] = [ 6. 10. 96. 106.]
505 cord_individual_obj[indivial_i, :] = [ 7. 10. 111. 121.]
506 cord_individual_obj[indivial_i, :] = [ 8. 9. 92. 101.]
507 cord_individual_obj[indivial_i, :] = [ 9. 7. 117. 124.]
508 cord_individual_obj[indivial_i, :] = [10. 8. 100. 108.]
509 cord_individual_obj[indivial_i, :] = [11. 8. 47. 55.]
510 cord_individual_obj[indivial_i, :] = [12. 7. 118. 125.]
511 cord_individual_obj[indivial_i, :] = [13. 10. 101. 111.]
512 cord_individual_obj[indivial_i, :] = [14. 9. 133. 142.]
513 cord_individual_obj[indivial_i, :] = [15. 10. 95. 105.]
514 cord_individual_obj[indivial_i, :] = [16. 8. 97. 105.]
515 cord_individual_obj[indivial_i, :] = [17. 9. 82. 91.]
516 cord_individual_obj[indivial_i, :] = [18. 7. 70. 77.]
517 cord_individual_obj[indivial_i, :] = [19. 9. 95. 104.]
518 cord_individual_obj[indivial_i, :] = [20. 9. 117. 126.]
519 cord_individual_obj[indivial_i, :] = [21. 9. 84. 93.]
520 cord_individual_obj[indivial_i, :] = [22. 9. 91. 100.]
521 cord_individual_obj[indivial_i, :] = [23. 10. 128. 138.]
522 cord_individual_obj[indivial_i, :] = [24. 8. 84. 92.]
523
524 min(cord_individual_obj[:, 3]) = 55.0
525 histol_G_best_iter[iter, 3] = 55.0
526 Begin iteration:
527
528 iter = 16
529 cord_individual_obj[indivial_i, :] = [ 0. 10. 114. 124.]
530 cord_individual_obj[indivial_i, :] = [ 1. 8. 121. 129.]
531 cord_individual_obj[indivial_i, :] = [ 2. 8. 130. 138.]
532 cord_individual_obj[indivial_i, :] = [ 3. 7. 120. 127.]
533 cord_individual_obj[indivial_i, :] = [ 4. 10. 91. 101.]
534 cord_individual_obj[indivial_i, :] = [ 5. 11. 108. 119.]
535 cord_individual_obj[indivial_i, :] = [ 6. 10. 99. 109.]
536 cord_individual_obj[indivial_i, :] = [ 7. 11. 111. 122.]
537 cord_individual_obj[indivial_i, :] = [ 8. 10. 63. 73.]
538 cord_individual_obj[indivial_i, :] = [ 9. 7. 111. 118.]
539 cord_individual_obj[indivial_i, :] = [10. 8. 96. 104.]
540 cord_individual_obj[indivial_i, :] = [11. 9. 135. 144.]
541 cord_individual_obj[indivial_i, :] = [12. 7. 64. 71.]
542 cord_individual_obj[indivial_i, :] = [13. 10. 99. 109.]
543 cord_individual_obj[indivial_i, :] = [14. 8. 47. 55.]
544 cord_individual_obj[indivial_i, :] = [15. 8. 103. 111.]
545 cord_individual_obj[indivial_i, :] = [16. 9. 83. 92.]
546 cord_individual_obj[indivial_i, :] = [17. 10. 94. 104.]
547 cord_individual_obj[indivial_i, :] = [18. 9. 161. 170.]
548 cord_individual_obj[indivial_i, :] = [19. 8. 74. 82.]
549 cord_individual_obj[indivial_i, :] = [20. 9. 85. 94.]
550 cord_individual_obj[indivial_i, :] = [21. 9. 84. 93.]
551 cord_individual_obj[indivial_i, :] = [22. 9. 87. 96.]
552 cord_individual_obj[indivial_i, :] = [23. 10. 131. 141.]
553 cord_individual_obj[indivial_i, :] = [24. 8. 72. 80.]
554
555 min(cord_individual_obj[:, 3]) = 55.0
556 histol_G_best_iter[iter, 3] = 55.0
557 Begin iteration:
558
559 iter = 17
560 cord_individual_obj[indivial_i, :] = [ 0. 10. 140. 150.]
561 cord_individual_obj[indivial_i, :] = [ 1. 11. 107. 118.]
562 cord_individual_obj[indivial_i, :] = [ 2. 8. 103. 111.]
563 cord_individual_obj[indivial_i, :] = [ 3. 11. 93. 104.]
564 cord_individual_obj[indivial_i, :] = [ 4. 8. 77. 85.]
565 cord_individual_obj[indivial_i, :] = [ 5. 11. 79. 90.]
566 cord_individual_obj[indivial_i, :] = [ 6. 8. 108. 116.]
567 cord_individual_obj[indivial_i, :] = [ 7. 10. 81. 91.]
568 cord_individual_obj[indivial_i, :] = [ 8. 8. 119. 127.]
569 cord_individual_obj[indivial_i, :] = [ 9. 7. 70. 77.]
570 cord_individual_obj[indivial_i, :] = [10. 12. 80. 92.]
571 cord_individual_obj[indivial_i, :] = [11. 9. 53. 62.]
572 cord_individual_obj[indivial_i, :] = [12. 8. 89. 97.]
573 cord_individual_obj[indivial_i, :] = [13. 9. 76. 85.]
574 cord_individual_obj[indivial_i, :] = [14. 9. 145. 154.]
575 cord_individual_obj[indivial_i, :] = [15. 11. 81. 92.]
576 cord_individual_obj[indivial_i, :] = [16. 8. 87. 95.]
577 cord_individual_obj[indivial_i, :] = [17. 11. 94. 105.]
578 cord_individual_obj[indivial_i, :] = [18. 8. 47. 55.]
579 cord_individual_obj[indivial_i, :] = [19. 8. 111. 119.]
580 cord_individual_obj[indivial_i, :] = [20. 10. 158. 168.]
581 cord_individual_obj[indivial_i, :] = [21. 9. 94. 103.]
582 cord_individual_obj[indivial_i, :] = [22. 10. 138. 148.]
583 cord_individual_obj[indivial_i, :] = [23. 10. 91. 101.]

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unknown

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584     cord_individual_obj[indivial_i, :] = [24. 9. 79. 88.]  
585  
586     min(cord_individual_obj[:, 3]) = 55.0  
587     historl_G_best_iter[iter, 3] = 55.0  
588 Begin iteration:  
589  
590 iter = 18  
591     cord_individual_obj[indivial_i, :] = [ 0. 8. 102. 110.]  
592     cord_individual_obj[indivial_i, :] = [ 1. 9. 139. 148.]  
593     cord_individual_obj[indivial_i, :] = [ 2. 9. 75. 84.]  
594     cord_individual_obj[indivial_i, :] = [ 3. 7. 90. 97.]  
595     cord_individual_obj[indivial_i, :] = [ 4. 12. 158. 170.]  
596     cord_individual_obj[indivial_i, :] = [ 5. 8. 77. 85.]  
597     cord_individual_obj[indivial_i, :] = [ 6. 10. 129. 139.]  
598     cord_individual_obj[indivial_i, :] = [ 7. 8. 116. 124.]  
599     cord_individual_obj[indivial_i, :] = [ 8. 11. 81. 92.]  
600     cord_individual_obj[indivial_i, :] = [ 9. 8. 93. 101.]  
601     cord_individual_obj[indivial_i, :] = [10. 7. 101. 108.]  
602     cord_individual_obj[indivial_i, :] = [11. 10. 116. 126.]  
603     cord_individual_obj[indivial_i, :] = [12. 8. 75. 83.]  
604     cord_individual_obj[indivial_i, :] = [13. 10. 63. 73.]  
605     cord_individual_obj[indivial_i, :] = [14. 10. 96. 106.]  
606     cord_individual_obj[indivial_i, :] = [15. 10. 98. 108.]  
607     cord_individual_obj[indivial_i, :] = [16. 9. 85. 94.]  
608     cord_individual_obj[indivial_i, :] = [17. 8. 112. 120.]  
609     cord_individual_obj[indivial_i, :] = [18. 7. 99. 106.]  
610     cord_individual_obj[indivial_i, :] = [19. 10. 158. 168.]  
611     cord_individual_obj[indivial_i, :] = [20. 8. 47. 55.]  
612     cord_individual_obj[indivial_i, :] = [21. 9. 123. 132.]  
613     cord_individual_obj[indivial_i, :] = [22. 8. 77. 85.]  
614     cord_individual_obj[indivial_i, :] = [23. 12. 136. 148.]  
615     cord_individual_obj[indivial_i, :] = [24. 8. 100. 108.]  
616  
617     min(cord_individual_obj[:, 3]) = 55.0  
618     historl_G_best_iter[iter, 3] = 55.0  
619 Begin iteration:  
620  
621 iter = 19  
622     cord_individual_obj[indivial_i, :] = [ 0. 8. 73. 81.]  
623     cord_individual_obj[indivial_i, :] = [ 1. 10. 104. 114.]  
624     cord_individual_obj[indivial_i, :] = [ 2. 10. 77. 87.]  
625     cord_individual_obj[indivial_i, :] = [ 3. 9. 140. 149.]  
626     cord_individual_obj[indivial_i, :] = [ 4. 8. 47. 55.]  
627     cord_individual_obj[indivial_i, :] = [ 5. 11. 108. 119.]  
628     cord_individual_obj[indivial_i, :] = [ 6. 9. 97. 106.]  
629     cord_individual_obj[indivial_i, :] = [ 7. 10. 104. 114.]  
630     cord_individual_obj[indivial_i, :] = [ 8. 9. 59. 68.]  
631     cord_individual_obj[indivial_i, :] = [ 9. 8. 137. 145.]  
632     cord_individual_obj[indivial_i, :] = [10. 8. 91. 99.]  
633     cord_individual_obj[indivial_i, :] = [11. 9. 143. 152.]  
634     cord_individual_obj[indivial_i, :] = [12. 6. 98. 104.]  
635     cord_individual_obj[indivial_i, :] = [13. 11. 88. 99.]  
636     cord_individual_obj[indivial_i, :] = [14. 9. 124. 133.]  
637     cord_individual_obj[indivial_i, :] = [15. 8. 90. 98.]  
638     cord_individual_obj[indivial_i, :] = [16. 11. 96. 107.]  
639     cord_individual_obj[indivial_i, :] = [17. 8. 84. 92.]  
640     cord_individual_obj[indivial_i, :] = [18. 9. 123. 132.]  
641     cord_individual_obj[indivial_i, :] = [19. 10. 100. 110.]  
642     cord_individual_obj[indivial_i, :] = [20. 8. 104. 112.]  
643     cord_individual_obj[indivial_i, :] = [21. 8. 107. 115.]  
644     cord_individual_obj[indivial_i, :] = [22. 11. 104. 115.]  
645     cord_individual_obj[indivial_i, :] = [23. 10. 130. 140.]  
646     cord_individual_obj[indivial_i, :] = [24. 7. 76. 83.]  
647  
648     min(cord_individual_obj[:, 3]) = 55.0  
649     historl_G_best_iter[iter, 3] = 55.0  
650 Begin iteration:  
651  
652 iter = 20  
653     cord_individual_obj[indivial_i, :] = [ 0. 8. 73. 81.]  
654     cord_individual_obj[indivial_i, :] = [ 1. 10. 146. 156.]  
655     cord_individual_obj[indivial_i, :] = [ 2. 10. 116. 126.]  
656     cord_individual_obj[indivial_i, :] = [ 3. 8. 133. 141.]  
657     cord_individual_obj[indivial_i, :] = [ 4. 10. 91. 101.]  
658     cord_individual_obj[indivial_i, :] = [ 5. 11. 96. 107.]  
659     cord_individual_obj[indivial_i, :] = [ 6. 10. 120. 130.]  
660     cord_individual_obj[indivial_i, :] = [ 7. 11. 93. 104.]  
661     cord_individual_obj[indivial_i, :] = [ 8. 10. 60. 70.]  
662     cord_individual_obj[indivial_i, :] = [ 9. 8. 133. 141.]  
663     cord_individual_obj[indivial_i, :] = [10. 9. 124. 133.]  
664     cord_individual_obj[indivial_i, :] = [11. 8. 47. 55.]  
665     cord_individual_obj[indivial_i, :] = [12. 7. 62. 69.]  
666     cord_individual_obj[indivial_i, :] = [13. 10. 106. 116.]  
667     cord_individual_obj[indivial_i, :] = [14. 8. 165. 173.]
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668 cord_individual_obj[indivial_i,:] = [ 15. 10. 106. 116.]
669 cord_individual_obj[indivial_i,:] = [16. 10. 80. 90.]
670 cord_individual_obj[indivial_i,:] = [ 17. 9. 94. 103.]
671 cord_individual_obj[indivial_i,:] = [18. 7. 61. 68.]
672 cord_individual_obj[indivial_i,:] = [19. 9. 65. 74.]
673 cord_individual_obj[indivial_i,:] = [ 20. 8. 111. 119.]
674 cord_individual_obj[indivial_i,:] = [21. 9. 85. 94.]
675 cord_individual_obj[indivial_i,:] = [22. 8. 82. 90.]
676 cord_individual_obj[indivial_i,:] = [ 23. 10. 131. 141.]
677 cord_individual_obj[indivial_i,:] = [24. 8. 76. 84.]
678
679 min(cord_individual_obj[:, 3]) = 55.0
680 historl_G_best_iter[iter, 3] = 55.0
681 Iteration calculate over
682
683
684
685
686 All item are in Bin and:
687 Bin area = 1080
688 Real_area = 193.0
689 Proportion_of_area = 0.1787037037037037
690 BEST_CHROM =
691 berth: [25.5 10. 2.5 4. 19.5 16.5 6.5 11. 8. 4. 3. 12.5 16. 12.5
692 25.5 2.5]
693 time: [0. 1. 0. 6. 0. 2. 0. 6. 5. 2. 4. 4. 5. 0. 3. 5.]
694 num_QC: [2. 4. 2. 3. 4. 4. 2. 3. 3. 4. 5. 4. 2. 4. 2. 4.]
695 Objective function values and some other indicators:
696 Obj0 = 8.00          Obj1 = 47.00          Obj0 + Obj1 = 55.00
697 Total movement of crane: 4.00
698 Total waiting time in berth position: 43.00
699 Total index of q during berthing: 817.00
700 Specific arrangement for each vessel:
701 V_id: 0      li: 7.0           xi: 25.5           bow of i: 22.0           tail of i: 29.0           gama_i0: 0.0           gama_i1: 2
702 .0          gama_i1 + 1: 3.0   gama_i1 - gama_i0: 2.0           duration_time_i: 3.0           demand_i: 120.0           work
703 load_i: 120.0
704 V_id: 1      li: 4.0           xi: 10.0           bow of i: 8.0           tail of i: 12.0           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: 140.0           work
706 load_i: 140.0
707 V_id: 2      li: 5.0           xi: 2.5            bow of i: 0.0           tail of i: 5.0           gama_i0: 0.0           gama_i1: 1.0
708 .0          gama_i1 + 1: 2.0   gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 80.0           work load_i:
709 80.0        work load gap_i: 0
710 V_id: 3      li: 8.0           xi: 4.0            bow of i: 0.0           tail of i: 8.0           gama_i0: 6.0           gama_i1: 8.0
711 .0          gama_i1 + 1: 9.0   gama_i1 - gama_i0: 2.0           duration_time_i: 3.0           demand_i: 140.0           work load_i:
712 140.0       work load gap_i: 0
713 V_id: 4      li: 5.0           xi: 19.5           bow of i: 17.0           tail of i: 22.0           gama_i0: 0.0           gama_i1: 1
714 .0          gama_i1 + 1: 2.0   gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 140.0           work
715 load_i: 140.0
716 V_id: 5      li: 9.0           xi: 16.5           bow of i: 12.0           tail of i: 21.0           gama_i0: 2.0           gama_i1: 3
717 .0          gama_i1 + 1: 4.0   gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 120.0           work
718 load_i: 120.0
719 V_id: 6      li: 3.0           xi: 6.5            bow of i: 5.0           tail of i: 8.0           gama_i0: 0.0           gama_i1: 1.0
720 .0          gama_i1 + 1: 2.0   gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 80.0           work load_i:
721 80.0        work load gap_i: 0
722 V_id: 7      li: 6.0           xi: 11.0           bow of i: 8.0           tail of i: 14.0           gama_i0: 6.0           gama_i1: 7
723 .0          gama_i1 + 1: 8.0   gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 80.0           work
724 load_i: 80.0
725 V_id: 8      li: 4.0           xi: 8.0            bow of i: 6.0           tail of i: 10.0           gama_i0: 5.0           gama_i1: 5.0
726 .0          gama_i1 + 1: 6.0   gama_i1 - gama_i0: 0.0           duration_time_i: 1.0           demand_i: 60.0           work load_i:
727 60.0        work load gap_i: 0
728 V_id: 9      li: 8.0           xi: 4.0            bow of i: 0.0           tail of i: 8.0           gama_i0: 2.0           gama_i1: 3.0
729 .0          gama_i1 + 1: 4.0   gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 140.0           work load_i:
730 140.0       work load gap_i: 0
731 V_id: 10     li: 6.0           xi: 3.0            bow of i: 0.0           tail of i: 6.0           gama_i0: 4.0           gama_i1: 4.0
732 .0          gama_i1 + 1: 5.0   gama_i1 - gama_i0: 0.0           duration_time_i: 1.0           demand_i: 80.0           work load_i:
733 80.0        work load gap_i: 0
734 V_id: 11     li: 9.0           xi: 12.5           bow of i: 8.0           tail of i: 17.0           gama_i0: 4.0           gama_i1:
735 : 4.0        gama_i1 + 1: 5.0   gama_i1 - gama_i0: 0.0           duration_time_i: 1.0           demand_i: 60.0           work
736 load_i: 60.0
737 V_id: 12     li: 4.0           xi: 16.0           bow of i: 14.0           tail of i: 18.0           gama_i0: 5.0           gama_i1:
738 : 7.0        gama_i1 + 1: 8.0   gama_i1 - gama_i0: 2.0           duration_time_i: 3.0           demand_i: 100.0           work
739 load_i: 100.0
740 V_id: 13     li: 9.0           xi: 12.5           bow of i: 8.0           tail of i: 17.0           gama_i0: 0.0           gama_i1:
741 : 0.0        gama_i1 + 1: 1.0   gama_i1 - gama_i0: 0.0           duration_time_i: 1.0           demand_i: 80.0           work
742 load_i: 80.0
743 V_id: 14     li: 9.0           xi: 25.5           bow of i: 21.0           tail of i: 30.0           gama_i0: 3.0           gama_i1:
744 : 6.0        gama_i1 + 1: 7.0   gama_i1 - gama_i0: 3.0           duration_time_i: 4.0           demand_i: 160.0           work
745 load_i: 160.0
746 V_id: 15     li: 5.0           xi: 2.5            bow of i: 0.0           tail of i: 5.0           gama_i0: 5.0           gama_i1:
747 80.0        gama_i1 + 1: 6.0   gama_i1 - gama_i0: 0.0           duration_time_i: 1.0           demand_i: 80.0           work load_i:
748
749 Algorithm finished and the total CPU time: 502 s
750 End

```