

unknown

```

80 cord_individual_obj[indivial_i,:] = [ 16. 8. 101. 109.]
81 cord_individual_obj[indivial_i,:] = [17. 8. 90. 98.]
82 cord_individual_obj[indivial_i,:] = [ 18. 7. 124. 131.]
83 cord_individual_obj[indivial_i,:] = [19. 7. 74. 81.]
84 cord_individual_obj[indivial_i,:] = [ 20. 8. 94. 102.]
85 cord_individual_obj[indivial_i,:] = [21. 9. 64. 73.]
86 cord_individual_obj[indivial_i,:] = [22. 8. 83. 91.]
87 cord_individual_obj[indivial_i,:] = [23. 9. 82. 91.]
88 cord_individual_obj[indivial_i,:] = [24. 7. 82. 89.]
89
90 min(cord_individual_obj[:,3]) = 64.0
91 historl_G_best_iter[iter, 3] = 64.0
92 Begin iteration:
93
94 iter = 2
95 cord_individual_obj[indivial_i,:] = [ 0. 8. 99. 107.]
96 cord_individual_obj[indivial_i,:] = [ 1. 10. 116. 126.]
97 cord_individual_obj[indivial_i,:] = [ 2. 7. 120. 127.]
98 cord_individual_obj[indivial_i,:] = [ 3. 6. 108. 114.]
99 cord_individual_obj[indivial_i,:] = [ 4. 8. 98. 106.]
100 cord_individual_obj[indivial_i,:] = [ 5. 7. 139. 146.]
101 cord_individual_obj[indivial_i,:] = [ 6. 7. 117. 124.]
102 cord_individual_obj[indivial_i,:] = [ 7. 9. 79. 88.]
103 cord_individual_obj[indivial_i,:] = [ 8. 8. 56. 64.]
104 cord_individual_obj[indivial_i,:] = [ 9. 10. 110. 120.]
105 cord_individual_obj[indivial_i,:] = [10. 9. 115. 124.]
106 cord_individual_obj[indivial_i,:] = [11. 10. 135. 145.]
107 cord_individual_obj[indivial_i,:] = [12. 7. 171. 178.]
108 cord_individual_obj[indivial_i,:] = [13. 7. 112. 119.]
109 cord_individual_obj[indivial_i,:] = [14. 10. 82. 92.]
110 cord_individual_obj[indivial_i,:] = [15. 11. 127. 138.]
111 cord_individual_obj[indivial_i,:] = [16. 8. 89. 97.]
112 cord_individual_obj[indivial_i,:] = [17. 8. 129. 137.]
113 cord_individual_obj[indivial_i,:] = [18. 8. 113. 121.]
114 cord_individual_obj[indivial_i,:] = [19. 8. 92. 100.]
115 cord_individual_obj[indivial_i,:] = [20. 7. 144. 151.]
116 cord_individual_obj[indivial_i,:] = [21. 8. 71. 79.]
117 cord_individual_obj[indivial_i,:] = [22. 9. 93. 102.]
118 cord_individual_obj[indivial_i,:] = [23. 7. 154. 161.]
119 cord_individual_obj[indivial_i,:] = [24. 8. 107. 115.]
120
121 min(cord_individual_obj[:,3]) = 64.0
122 historl_G_best_iter[iter, 3] = 64.0
123 Begin iteration:
124
125 iter = 3
126 cord_individual_obj[indivial_i,:] = [ 0. 10. 99. 109.]
127 cord_individual_obj[indivial_i,:] = [ 1. 9. 82. 91.]
128 cord_individual_obj[indivial_i,:] = [ 2. 7. 117. 124.]
129 cord_individual_obj[indivial_i,:] = [ 3. 10. 111. 121.]
130 cord_individual_obj[indivial_i,:] = [ 4. 7. 94. 101.]
131 cord_individual_obj[indivial_i,:] = [ 5. 8. 161. 169.]
132 cord_individual_obj[indivial_i,:] = [ 6. 8. 127. 135.]
133 cord_individual_obj[indivial_i,:] = [ 7. 8. 123. 131.]
134 cord_individual_obj[indivial_i,:] = [ 8. 9. 126. 135.]
135 cord_individual_obj[indivial_i,:] = [ 9. 11. 119. 130.]
136 cord_individual_obj[indivial_i,:] = [10. 10. 136. 146.]
137 cord_individual_obj[indivial_i,:] = [11. 9. 95. 104.]
138 cord_individual_obj[indivial_i,:] = [12. 8. 56. 64.]
139 cord_individual_obj[indivial_i,:] = [13. 9. 111. 120.]
140 cord_individual_obj[indivial_i,:] = [14. 11. 110. 121.]
141 cord_individual_obj[indivial_i,:] = [15. 10. 97. 107.]
142 cord_individual_obj[indivial_i,:] = [16. 10. 115. 125.]
143 cord_individual_obj[indivial_i,:] = [17. 8. 81. 89.]
144 cord_individual_obj[indivial_i,:] = [18. 9. 150. 159.]
145 cord_individual_obj[indivial_i,:] = [19. 7. 99. 106.]
146 cord_individual_obj[indivial_i,:] = [20. 9. 105. 114.]
147 cord_individual_obj[indivial_i,:] = [21. 7. 134. 141.]
148 cord_individual_obj[indivial_i,:] = [22. 7. 149. 156.]
149 cord_individual_obj[indivial_i,:] = [23. 9. 158. 167.]
150 cord_individual_obj[indivial_i,:] = [24. 8. 135. 143.]
151
152 min(cord_individual_obj[:,3]) = 64.0
153 historl_G_best_iter[iter, 3] = 64.0
154 Begin iteration:
155
156 iter = 4
157 cord_individual_obj[indivial_i,:] = [ 0. 8. 94. 102.]
158 cord_individual_obj[indivial_i,:] = [ 1. 8. 118. 126.]
159 cord_individual_obj[indivial_i,:] = [ 2. 7. 115. 122.]
160 cord_individual_obj[indivial_i,:] = [ 3. 10. 65. 75.]
161 cord_individual_obj[indivial_i,:] = [ 4. 9. 108. 117.]
162 cord_individual_obj[indivial_i,:] = [ 5. 8. 56. 64.]
163 cord_individual_obj[indivial_i,:] = [ 6. 7. 110. 117.]

```

```

164 cord_individual_obj[indivial_i, :] = [ 7. 9. 89. 98.]
165 cord_individual_obj[indivial_i, :] = [ 8. 10. 127. 137.]
166 cord_individual_obj[indivial_i, :] = [ 9. 9. 107. 116.]
167 cord_individual_obj[indivial_i, :] = [10. 13. 160. 173.]
168 cord_individual_obj[indivial_i, :] = [11. 10. 89. 99.]
169 cord_individual_obj[indivial_i, :] = [12. 9. 135. 144.]
170 cord_individual_obj[indivial_i, :] = [13. 8. 70. 78.]
171 cord_individual_obj[indivial_i, :] = [14. 10. 90. 100.]
172 cord_individual_obj[indivial_i, :] = [15. 10. 93. 103.]
173 cord_individual_obj[indivial_i, :] = [16. 10. 90. 100.]
174 cord_individual_obj[indivial_i, :] = [17. 7. 132. 139.]
175 cord_individual_obj[indivial_i, :] = [18. 8. 93. 101.]
176 cord_individual_obj[indivial_i, :] = [19. 6. 109. 115.]
177 cord_individual_obj[indivial_i, :] = [20. 12. 134. 146.]
178 cord_individual_obj[indivial_i, :] = [21. 8. 111. 119.]
179 cord_individual_obj[indivial_i, :] = [22. 8. 143. 151.]
180 cord_individual_obj[indivial_i, :] = [23. 8. 102. 110.]
181 cord_individual_obj[indivial_i, :] = [24. 8. 112. 120.]
182
183 min(cord_individual_obj[:, 3]) = 64.0
184 historl_G_best_iter[iter, 3] = 64.0
185 Begin iteration:
186
187 iter = 5
188 cord_individual_obj[indivial_i, :] = [ 0. 8. 70. 78.]
189 cord_individual_obj[indivial_i, :] = [ 1. 8. 116. 124.]
190 cord_individual_obj[indivial_i, :] = [ 2. 9. 156. 165.]
191 cord_individual_obj[indivial_i, :] = [ 3. 10. 85. 95.]
192 cord_individual_obj[indivial_i, :] = [ 4. 9. 75. 84.]
193 cord_individual_obj[indivial_i, :] = [ 5. 8. 86. 94.]
194 cord_individual_obj[indivial_i, :] = [ 6. 8. 101. 109.]
195 cord_individual_obj[indivial_i, :] = [ 7. 12. 115. 127.]
196 cord_individual_obj[indivial_i, :] = [ 8. 10. 119. 129.]
197 cord_individual_obj[indivial_i, :] = [ 9. 8. 100. 108.]
198 cord_individual_obj[indivial_i, :] = [10. 8. 56. 64.]
199 cord_individual_obj[indivial_i, :] = [11. 11. 130. 141.]
200 cord_individual_obj[indivial_i, :] = [12. 8. 123. 131.]
201 cord_individual_obj[indivial_i, :] = [13. 8. 99. 107.]
202 cord_individual_obj[indivial_i, :] = [14. 10. 121. 131.]
203 cord_individual_obj[indivial_i, :] = [15. 9. 77. 86.]
204 cord_individual_obj[indivial_i, :] = [16. 9. 110. 119.]
205 cord_individual_obj[indivial_i, :] = [17. 8. 115. 123.]
206 cord_individual_obj[indivial_i, :] = [18. 7. 151. 158.]
207 cord_individual_obj[indivial_i, :] = [19. 8. 95. 103.]
208 cord_individual_obj[indivial_i, :] = [20. 8. 112. 120.]
209 cord_individual_obj[indivial_i, :] = [21. 7. 122. 129.]
210 cord_individual_obj[indivial_i, :] = [22. 9. 122. 131.]
211 cord_individual_obj[indivial_i, :] = [23. 8. 133. 141.]
212 cord_individual_obj[indivial_i, :] = [24. 7. 131. 138.]
213
214 min(cord_individual_obj[:, 3]) = 64.0
215 historl_G_best_iter[iter, 3] = 64.0
216 Begin iteration:
217
218 iter = 6
219 cord_individual_obj[indivial_i, :] = [ 0. 8. 83. 91.]
220 cord_individual_obj[indivial_i, :] = [ 1. 8. 129. 137.]
221 cord_individual_obj[indivial_i, :] = [ 2. 8. 56. 64.]
222 cord_individual_obj[indivial_i, :] = [ 3. 7. 121. 128.]
223 cord_individual_obj[indivial_i, :] = [ 4. 8. 98. 106.]
224 cord_individual_obj[indivial_i, :] = [ 5. 8. 90. 98.]
225 cord_individual_obj[indivial_i, :] = [ 6. 8. 124. 132.]
226 cord_individual_obj[indivial_i, :] = [ 7. 9. 127. 136.]
227 cord_individual_obj[indivial_i, :] = [ 8. 10. 119. 129.]
228 cord_individual_obj[indivial_i, :] = [ 9. 12. 171. 183.]
229 cord_individual_obj[indivial_i, :] = [10. 11. 118. 129.]
230 cord_individual_obj[indivial_i, :] = [11. 7. 113. 120.]
231 cord_individual_obj[indivial_i, :] = [12. 9. 134. 143.]
232 cord_individual_obj[indivial_i, :] = [13. 8. 110. 118.]
233 cord_individual_obj[indivial_i, :] = [14. 10. 87. 97.]
234 cord_individual_obj[indivial_i, :] = [15. 11. 129. 140.]
235 cord_individual_obj[indivial_i, :] = [16. 9. 129. 138.]
236 cord_individual_obj[indivial_i, :] = [17. 9. 159. 168.]
237 cord_individual_obj[indivial_i, :] = [18. 9. 102. 111.]
238 cord_individual_obj[indivial_i, :] = [19. 7. 130. 137.]
239 cord_individual_obj[indivial_i, :] = [20. 10. 112. 122.]
240 cord_individual_obj[indivial_i, :] = [21. 7. 134. 141.]
241 cord_individual_obj[indivial_i, :] = [22. 8. 137. 145.]
242 cord_individual_obj[indivial_i, :] = [23. 9. 133. 142.]
243 cord_individual_obj[indivial_i, :] = [24. 7. 110. 117.]
244
245 min(cord_individual_obj[:, 3]) = 64.0
246 historl_G_best_iter[iter, 3] = 64.0
247 Begin iteration:

```

```

248
249 iter = 7
250 cord_individual_obj[indivial_i, :] = [ 0.  8. 80. 88.]
251 cord_individual_obj[indivial_i, :] = [ 1.  9. 111. 120.]
252 cord_individual_obj[indivial_i, :] = [ 2.  7. 125. 132.]
253 cord_individual_obj[indivial_i, :] = [ 3.  9. 103. 112.]
254 cord_individual_obj[indivial_i, :] = [ 4.  7. 88. 95.]
255 cord_individual_obj[indivial_i, :] = [ 5.  7. 132. 139.]
256 cord_individual_obj[indivial_i, :] = [ 6.  8. 127. 135.]
257 cord_individual_obj[indivial_i, :] = [ 7.  9. 141. 150.]
258 cord_individual_obj[indivial_i, :] = [ 8.  9. 135. 144.]
259 cord_individual_obj[indivial_i, :] = [ 9.  8. 56. 64.]
260 cord_individual_obj[indivial_i, :] = [10. 11. 97. 108.]
261 cord_individual_obj[indivial_i, :] = [11. 7. 113. 120.]
262 cord_individual_obj[indivial_i, :] = [12. 8. 152. 160.]
263 cord_individual_obj[indivial_i, :] = [13. 9. 100. 109.]
264 cord_individual_obj[indivial_i, :] = [14. 10. 87. 97.]
265 cord_individual_obj[indivial_i, :] = [15. 10. 86. 96.]
266 cord_individual_obj[indivial_i, :] = [16. 10. 124. 134.]
267 cord_individual_obj[indivial_i, :] = [17. 7. 96. 103.]
268 cord_individual_obj[indivial_i, :] = [18. 7. 125. 132.]
269 cord_individual_obj[indivial_i, :] = [19. 8. 112. 120.]
270 cord_individual_obj[indivial_i, :] = [20. 8. 96. 104.]
271 cord_individual_obj[indivial_i, :] = [21. 7. 86. 93.]
272 cord_individual_obj[indivial_i, :] = [22. 8. 150. 158.]
273 cord_individual_obj[indivial_i, :] = [23. 7. 131. 138.]
274 cord_individual_obj[indivial_i, :] = [24. 8. 149. 157.]
275

276 min(cord_individual_obj[:, 3]) = 64.0
277 historl_G_best_iter[iter, 3] = 64.0
278 Begin iteration:
279
280 iter = 8
281 cord_individual_obj[indivial_i, :] = [ 0.  8. 78. 86.]
282 cord_individual_obj[indivial_i, :] = [ 1.  8. 107. 115.]
283 cord_individual_obj[indivial_i, :] = [ 2.  8. 138. 146.]
284 cord_individual_obj[indivial_i, :] = [ 3.  8. 100. 108.]
285 cord_individual_obj[indivial_i, :] = [ 4.  8. 96. 104.]
286 cord_individual_obj[indivial_i, :] = [ 5.  8. 117. 125.]
287 cord_individual_obj[indivial_i, :] = [ 6. 11. 122. 133.]
288 cord_individual_obj[indivial_i, :] = [ 7. 10. 136. 146.]
289 cord_individual_obj[indivial_i, :] = [ 8. 9. 90. 99.]
290 cord_individual_obj[indivial_i, :] = [ 9. 8. 97. 105.]
291 cord_individual_obj[indivial_i, :] = [10. 8. 86. 94.]
292 cord_individual_obj[indivial_i, :] = [11. 7. 104. 111.]
293 cord_individual_obj[indivial_i, :] = [12. 8. 56. 64.]
294 cord_individual_obj[indivial_i, :] = [13. 8. 148. 156.]
295 cord_individual_obj[indivial_i, :] = [14. 9. 86. 95.]
296 cord_individual_obj[indivial_i, :] = [15. 9. 77. 86.]
297 cord_individual_obj[indivial_i, :] = [16. 11. 101. 112.]
298 cord_individual_obj[indivial_i, :] = [17. 8. 85. 93.]
299 cord_individual_obj[indivial_i, :] = [18. 9. 130. 139.]
300 cord_individual_obj[indivial_i, :] = [19. 6. 96. 102.]
301 cord_individual_obj[indivial_i, :] = [20. 10. 102. 112.]
302 cord_individual_obj[indivial_i, :] = [21. 9. 92. 101.]
303 cord_individual_obj[indivial_i, :] = [22. 9. 148. 157.]
304 cord_individual_obj[indivial_i, :] = [23. 9. 104. 113.]
305 cord_individual_obj[indivial_i, :] = [24. 8. 79. 87.]
306

307 min(cord_individual_obj[:, 3]) = 64.0
308 historl_G_best_iter[iter, 3] = 64.0
309 Begin iteration:
310
311 iter = 9
312 cord_individual_obj[indivial_i, :] = [ 0.  8. 83. 91.]
313 cord_individual_obj[indivial_i, :] = [ 1.  8. 110. 118.]
314 cord_individual_obj[indivial_i, :] = [ 2.  7. 116. 123.]
315 cord_individual_obj[indivial_i, :] = [ 3.  8. 109. 117.]
316 cord_individual_obj[indivial_i, :] = [ 4.  9. 154. 163.]
317 cord_individual_obj[indivial_i, :] = [ 5. 7. 92. 99.]
318 cord_individual_obj[indivial_i, :] = [ 6. 7. 89. 96.]
319 cord_individual_obj[indivial_i, :] = [ 7. 8. 110. 118.]
320 cord_individual_obj[indivial_i, :] = [ 8. 9. 123. 132.]
321 cord_individual_obj[indivial_i, :] = [ 9. 10. 123. 133.]
322 cord_individual_obj[indivial_i, :] = [10. 11. 126. 137.]
323 cord_individual_obj[indivial_i, :] = [11. 9. 102. 111.]
324 cord_individual_obj[indivial_i, :] = [12. 7. 121. 128.]
325 cord_individual_obj[indivial_i, :] = [13. 7. 122. 129.]
326 cord_individual_obj[indivial_i, :] = [14. 11. 113. 124.]
327 cord_individual_obj[indivial_i, :] = [15. 11. 145. 156.]
328 cord_individual_obj[indivial_i, :] = [16. 8. 103. 111.]
329 cord_individual_obj[indivial_i, :] = [17. 10. 113. 123.]
330 cord_individual_obj[indivial_i, :] = [18. 8. 128. 136.]
331 cord_individual_obj[indivial_i, :] = [19. 7. 100. 107.]

```

```

332 cord_individual_obj[indivial_i,:] = [20. 10. 88. 98.]
333 cord_individual_obj[indivial_i,:] = [21. 7. 92. 99.]
334 cord_individual_obj[indivial_i,:] = [22. 8. 56. 64.]
335 cord_individual_obj[indivial_i,:] = [23. 8. 125. 133.]
336 cord_individual_obj[indivial_i,:] = [24. 8. 140. 148.]
337
338 min(cord_individual_obj[:,3]) = 64.0
339 histol_G_best_iter[iter,3] = 64.0
340 Begin iteration:
341
342 iter = 10
343 cord_individual_obj[indivial_i,:] = [ 0. 8. 71. 79.]
344 cord_individual_obj[indivial_i,:] = [ 1. 7. 135. 142.]
345 cord_individual_obj[indivial_i,:] = [ 2. 7. 121. 128.]
346 cord_individual_obj[indivial_i,:] = [ 3. 7. 72. 79.]
347 cord_individual_obj[indivial_i,:] = [ 4. 8. 56. 64.]
348 cord_individual_obj[indivial_i,:] = [ 5. 9. 117. 126.]
349 cord_individual_obj[indivial_i,:] = [ 6. 8. 125. 133.]
350 cord_individual_obj[indivial_i,:] = [ 7. 9. 89. 98.]
351 cord_individual_obj[indivial_i,:] = [ 8. 8. 160. 168.]
352 cord_individual_obj[indivial_i,:] = [ 9. 9. 60. 69.]
353 cord_individual_obj[indivial_i,:] = [10. 8. 96. 104.]
354 cord_individual_obj[indivial_i,:] = [11. 7. 78. 85.]
355 cord_individual_obj[indivial_i,:] = [12. 8. 183. 191.]
356 cord_individual_obj[indivial_i,:] = [13. 8. 163. 171.]
357 cord_individual_obj[indivial_i,:] = [14. 11. 110. 121.]
358 cord_individual_obj[indivial_i,:] = [15. 9. 83. 92.]
359 cord_individual_obj[indivial_i,:] = [16. 10. 92. 102.]
360 cord_individual_obj[indivial_i,:] = [17. 8. 118. 126.]
361 cord_individual_obj[indivial_i,:] = [18. 8. 132. 140.]
362 cord_individual_obj[indivial_i,:] = [19. 7. 94. 101.]
363 cord_individual_obj[indivial_i,:] = [20. 10. 92. 102.]
364 cord_individual_obj[indivial_i,:] = [21. 8. 58. 66.]
365 cord_individual_obj[indivial_i,:] = [22. 8. 116. 124.]
366 cord_individual_obj[indivial_i,:] = [23. 10. 96. 106.]
367 cord_individual_obj[indivial_i,:] = [24. 7. 133. 140.]
368
369 min(cord_individual_obj[:,3]) = 64.0
370 histol_G_best_iter[iter,3] = 64.0
371 Begin iteration:
372
373 iter = 11
374 cord_individual_obj[indivial_i,:] = [ 0. 8. 61. 69.]
375 cord_individual_obj[indivial_i,:] = [ 1. 10. 139. 149.]
376 cord_individual_obj[indivial_i,:] = [ 2. 7. 54. 61.]
377 cord_individual_obj[indivial_i,:] = [ 3. 7. 69. 76.]
378 cord_individual_obj[indivial_i,:] = [ 4. 7. 88. 95.]
379 cord_individual_obj[indivial_i,:] = [ 5. 9. 126. 135.]
380 cord_individual_obj[indivial_i,:] = [ 6. 9. 130. 139.]
381 cord_individual_obj[indivial_i,:] = [ 7. 9. 130. 139.]
382 cord_individual_obj[indivial_i,:] = [ 8. 8. 54. 62.]
383 cord_individual_obj[indivial_i,:] = [ 9. 8. 95. 103.]
384 cord_individual_obj[indivial_i,:] = [10. 9. 157. 166.]
385 cord_individual_obj[indivial_i,:] = [11. 9. 99. 108.]
386 cord_individual_obj[indivial_i,:] = [12. 8. 56. 64.]
387 cord_individual_obj[indivial_i,:] = [13. 8. 119. 127.]
388 cord_individual_obj[indivial_i,:] = [14. 8. 144. 152.]
389 cord_individual_obj[indivial_i,:] = [15. 10. 93. 103.]
390 cord_individual_obj[indivial_i,:] = [16. 10. 122. 132.]
391 cord_individual_obj[indivial_i,:] = [17. 6. 177. 183.]
392 cord_individual_obj[indivial_i,:] = [18. 8. 80. 88.]
393 cord_individual_obj[indivial_i,:] = [19. 7. 110. 117.]
394 cord_individual_obj[indivial_i,:] = [20. 7. 130. 137.]
395 cord_individual_obj[indivial_i,:] = [21. 9. 81. 90.]
396 cord_individual_obj[indivial_i,:] = [22. 7. 108. 115.]
397 cord_individual_obj[indivial_i,:] = [23. 7. 96. 103.]
398 cord_individual_obj[indivial_i,:] = [24. 9. 66. 75.]
399
400 min(cord_individual_obj[:,3]) = 61.0
401 histol_G_best_iter[iter,3] = 61.0
402 Begin iteration:
403
404 iter = 12
405 cord_individual_obj[indivial_i,:] = [ 0. 7. 87. 94.]
406 cord_individual_obj[indivial_i,:] = [ 1. 7. 75. 82.]
407 cord_individual_obj[indivial_i,:] = [ 2. 8. 105. 113.]
408 cord_individual_obj[indivial_i,:] = [ 3. 9. 111. 120.]
409 cord_individual_obj[indivial_i,:] = [ 4. 8. 75. 83.]
410 cord_individual_obj[indivial_i,:] = [ 5. 7. 170. 177.]
411 cord_individual_obj[indivial_i,:] = [ 6. 9. 68. 77.]
412 cord_individual_obj[indivial_i,:] = [ 7. 10. 84. 94.]
413 cord_individual_obj[indivial_i,:] = [ 8. 10. 143. 153.]
414 cord_individual_obj[indivial_i,:] = [ 9. 10. 72. 82.]
415 cord_individual_obj[indivial_i,:] = [10. 10. 115. 125.]

```

```

416 cord_individual_obj[indivial_i,:] = [11. 8. 85. 93.]
417 cord_individual_obj[indivial_i,:] = [12. 9. 135. 144.]
418 cord_individual_obj[indivial_i,:] = [13. 7. 80. 87.]
419 cord_individual_obj[indivial_i,:] = [14. 9. 90. 99.]
420 cord_individual_obj[indivial_i,:] = [15. 9. 77. 86.]
421 cord_individual_obj[indivial_i,:] = [16. 10. 100. 110.]
422 cord_individual_obj[indivial_i,:] = [17. 7. 54. 61.]
423 cord_individual_obj[indivial_i,:] = [18. 8. 95. 103.]
424 cord_individual_obj[indivial_i,:] = [19. 7. 118. 125.]
425 cord_individual_obj[indivial_i,:] = [20. 10. 65. 75.]
426 cord_individual_obj[indivial_i,:] = [21. 9. 158. 167.]
427 cord_individual_obj[indivial_i,:] = [22. 9. 106. 115.]
428 cord_individual_obj[indivial_i,:] = [23. 7. 107. 114.]
429 cord_individual_obj[indivial_i,:] = [24. 8. 100. 108.]
430
431 min(cord_individual_obj[:,3]) = 61.0
432 histol_G_best_iter[iter,3] = 61.0
433 Begin iteration:
434
435 iter = 13
436 cord_individual_obj[indivial_i,:] = [0. 9. 82. 91.]
437 cord_individual_obj[indivial_i,:] = [1. 8. 92. 100.]
438 cord_individual_obj[indivial_i,:] = [2. 9. 98. 107.]
439 cord_individual_obj[indivial_i,:] = [3. 9. 56. 65.]
440 cord_individual_obj[indivial_i,:] = [4. 8. 49. 57.]
441 cord_individual_obj[indivial_i,:] = [5. 7. 54. 61.]
442 cord_individual_obj[indivial_i,:] = [6. 9. 72. 81.]
443 cord_individual_obj[indivial_i,:] = [7. 10. 120. 130.]
444 cord_individual_obj[indivial_i,:] = [8. 9. 136. 145.]
445 cord_individual_obj[indivial_i,:] = [9. 8. 116. 124.]
446 cord_individual_obj[indivial_i,:] = [10. 12. 106. 118.]
447 cord_individual_obj[indivial_i,:] = [11. 7. 140. 147.]
448 cord_individual_obj[indivial_i,:] = [12. 7. 119. 126.]
449 cord_individual_obj[indivial_i,:] = [13. 8. 125. 133.]
450 cord_individual_obj[indivial_i,:] = [14. 11. 98. 109.]
451 cord_individual_obj[indivial_i,:] = [15. 8. 119. 127.]
452 cord_individual_obj[indivial_i,:] = [16. 9. 124. 133.]
453 cord_individual_obj[indivial_i,:] = [17. 8. 112. 120.]
454 cord_individual_obj[indivial_i,:] = [18. 7. 155. 162.]
455 cord_individual_obj[indivial_i,:] = [19. 7. 129. 136.]
456 cord_individual_obj[indivial_i,:] = [20. 10. 102. 112.]
457 cord_individual_obj[indivial_i,:] = [21. 7. 164. 171.]
458 cord_individual_obj[indivial_i,:] = [22. 10. 73. 83.]
459 cord_individual_obj[indivial_i,:] = [23. 11. 104. 115.]
460 cord_individual_obj[indivial_i,:] = [24. 7. 79. 86.]
461
462 min(cord_individual_obj[:,3]) = 57.0
463 histol_G_best_iter[iter,3] = 57.0
464 Begin iteration:
465
466 iter = 14
467 cord_individual_obj[indivial_i,:] = [0. 8. 71. 79.]
468 cord_individual_obj[indivial_i,:] = [1. 7. 69. 76.]
469 cord_individual_obj[indivial_i,:] = [2. 8. 98. 106.]
470 cord_individual_obj[indivial_i,:] = [3. 8. 106. 114.]
471 cord_individual_obj[indivial_i,:] = [4. 9. 133. 142.]
472 cord_individual_obj[indivial_i,:] = [5. 8. 74. 82.]
473 cord_individual_obj[indivial_i,:] = [6. 9. 146. 155.]
474 cord_individual_obj[indivial_i,:] = [7. 9. 99. 108.]
475 cord_individual_obj[indivial_i,:] = [8. 9. 123. 132.]
476 cord_individual_obj[indivial_i,:] = [9. 9. 91. 100.]
477 cord_individual_obj[indivial_i,:] = [10. 8. 129. 137.]
478 cord_individual_obj[indivial_i,:] = [11. 10. 147. 157.]
479 cord_individual_obj[indivial_i,:] = [12. 7. 75. 82.]
480 cord_individual_obj[indivial_i,:] = [13. 9. 95. 104.]
481 cord_individual_obj[indivial_i,:] = [14. 8. 120. 128.]
482 cord_individual_obj[indivial_i,:] = [15. 10. 83. 93.]
483 cord_individual_obj[indivial_i,:] = [16. 9. 87. 96.]
484 cord_individual_obj[indivial_i,:] = [17. 10. 87. 97.]
485 cord_individual_obj[indivial_i,:] = [18. 9. 103. 112.]
486 cord_individual_obj[indivial_i,:] = [19. 8. 119. 127.]
487 cord_individual_obj[indivial_i,:] = [20. 10. 147. 157.]
488 cord_individual_obj[indivial_i,:] = [21. 8. 49. 57.]
489 cord_individual_obj[indivial_i,:] = [22. 10. 60. 70.]
490 cord_individual_obj[indivial_i,:] = [23. 8. 87. 95.]
491 cord_individual_obj[indivial_i,:] = [24. 9. 97. 106.]
492
493 min(cord_individual_obj[:,3]) = 57.0
494 histol_G_best_iter[iter,3] = 57.0
495 Begin iteration:
496
497 iter = 15
498 cord_individual_obj[indivial_i,:] = [0. 11. 79. 90.]
499 cord_individual_obj[indivial_i,:] = [1. 10. 120. 130.]

```

```

500 cord_individual_obj[indivial_i,:] = [ 2. 9. 72. 81.]
501 cord_individual_obj[indivial_i,:] = [ 3. 10. 79. 89.]
502 cord_individual_obj[indivial_i,:] = [ 4. 10. 107. 117.]
503 cord_individual_obj[indivial_i,:] = [ 5. 8. 110. 118.]
504 cord_individual_obj[indivial_i,:] = [ 6. 10. 58. 68.]
505 cord_individual_obj[indivial_i,:] = [ 7. 9. 84. 93.]
506 cord_individual_obj[indivial_i,:] = [ 8. 7. 72. 79.]
507 cord_individual_obj[indivial_i,:] = [ 9. 9. 77. 86.]
508 cord_individual_obj[indivial_i,:] = [ 10. 12. 121. 133.]
509 cord_individual_obj[indivial_i,:] = [ 11. 8. 49. 57.]
510 cord_individual_obj[indivial_i,:] = [ 12. 8. 105. 113.]
511 cord_individual_obj[indivial_i,:] = [ 13. 8. 106. 114.]
512 cord_individual_obj[indivial_i,:] = [ 14. 8. 80. 88.]
513 cord_individual_obj[indivial_i,:] = [ 15. 8. 134. 142.]
514 cord_individual_obj[indivial_i,:] = [ 16. 11. 100. 111.]
515 cord_individual_obj[indivial_i,:] = [ 17. 9. 67. 76.]
516 cord_individual_obj[indivial_i,:] = [ 18. 7. 113. 120.]
517 cord_individual_obj[indivial_i,:] = [ 19. 9. 69. 78.]
518 cord_individual_obj[indivial_i,:] = [ 20. 9. 92. 101.]
519 cord_individual_obj[indivial_i,:] = [ 21. 10. 52. 62.]
520 cord_individual_obj[indivial_i,:] = [ 22. 10. 81. 91.]
521 cord_individual_obj[indivial_i,:] = [ 23. 9. 73. 82.]
522 cord_individual_obj[indivial_i,:] = [ 24. 8. 69. 77.]
523
524 min(cord_individual_obj[:, 3]) = 57.0
525 histol_G_best_iter[iter, 3] = 57.0
526 Begin iteration:
527
528 iter = 16
529 cord_individual_obj[indivial_i,:] = [ 0. 7. 85. 92.]
530 cord_individual_obj[indivial_i,:] = [ 1. 9. 59. 68.]
531 cord_individual_obj[indivial_i,:] = [ 2. 8. 41. 49.]
532 cord_individual_obj[indivial_i,:] = [ 3. 9. 98. 107.]
533 cord_individual_obj[indivial_i,:] = [ 4. 11. 111. 122.]
534 cord_individual_obj[indivial_i,:] = [ 5. 7. 70. 77.]
535 cord_individual_obj[indivial_i,:] = [ 6. 10. 56. 66.]
536 cord_individual_obj[indivial_i,:] = [ 7. 9. 54. 63.]
537 cord_individual_obj[indivial_i,:] = [ 8. 11. 108. 119.]
538 cord_individual_obj[indivial_i,:] = [ 9. 8. 142. 150.]
539 cord_individual_obj[indivial_i,:] = [ 10. 7. 120. 127.]
540 cord_individual_obj[indivial_i,:] = [ 11. 7. 91. 98.]
541 cord_individual_obj[indivial_i,:] = [ 12. 7. 110. 117.]
542 cord_individual_obj[indivial_i,:] = [ 13. 8. 116. 124.]
543 cord_individual_obj[indivial_i,:] = [ 14. 11. 89. 100.]
544 cord_individual_obj[indivial_i,:] = [ 15. 8. 49. 57.]
545 cord_individual_obj[indivial_i,:] = [ 16. 8. 95. 103.]
546 cord_individual_obj[indivial_i,:] = [ 17. 7. 65. 72.]
547 cord_individual_obj[indivial_i,:] = [ 18. 8. 86. 94.]
548 cord_individual_obj[indivial_i,:] = [ 19. 7. 102. 109.]
549 cord_individual_obj[indivial_i,:] = [ 20. 9. 93. 102.]
550 cord_individual_obj[indivial_i,:] = [ 21. 9. 101. 110.]
551 cord_individual_obj[indivial_i,:] = [ 22. 10. 85. 95.]
552 cord_individual_obj[indivial_i,:] = [ 23. 7. 135. 142.]
553 cord_individual_obj[indivial_i,:] = [ 24. 8. 142. 150.]
554
555 min(cord_individual_obj[:, 3]) = 49.0
556 histol_G_best_iter[iter, 3] = 49.0
557 Begin iteration:
558
559 iter = 17
560 cord_individual_obj[indivial_i,:] = [ 0. 8. 75. 83.]
561 cord_individual_obj[indivial_i,:] = [ 1. 10. 126. 136.]
562 cord_individual_obj[indivial_i,:] = [ 2. 8. 78. 86.]
563 cord_individual_obj[indivial_i,:] = [ 3. 6. 103. 109.]
564 cord_individual_obj[indivial_i,:] = [ 4. 7. 67. 74.]
565 cord_individual_obj[indivial_i,:] = [ 5. 9. 101. 110.]
566 cord_individual_obj[indivial_i,:] = [ 6. 8. 55. 63.]
567 cord_individual_obj[indivial_i,:] = [ 7. 10. 72. 82.]
568 cord_individual_obj[indivial_i,:] = [ 8. 8. 60. 68.]
569 cord_individual_obj[indivial_i,:] = [ 9. 8. 41. 49.]
570 cord_individual_obj[indivial_i,:] = [ 10. 10. 94. 104.]
571 cord_individual_obj[indivial_i,:] = [ 11. 8. 91. 99.]
572 cord_individual_obj[indivial_i,:] = [ 12. 8. 123. 131.]
573 cord_individual_obj[indivial_i,:] = [ 13. 9. 54. 63.]
574 cord_individual_obj[indivial_i,:] = [ 14. 9. 87. 96.]
575 cord_individual_obj[indivial_i,:] = [ 15. 10. 64. 74.]
576 cord_individual_obj[indivial_i,:] = [ 16. 7. 69. 76.]
577 cord_individual_obj[indivial_i,:] = [ 17. 9. 83. 92.]
578 cord_individual_obj[indivial_i,:] = [ 18. 9. 96. 105.]
579 cord_individual_obj[indivial_i,:] = [ 19. 8. 58. 66.]
580 cord_individual_obj[indivial_i,:] = [ 20. 9. 57. 66.]
581 cord_individual_obj[indivial_i,:] = [ 21. 8. 78. 86.]
582 cord_individual_obj[indivial_i,:] = [ 22. 8. 73. 81.]
583 cord_individual_obj[indivial_i,:] = [ 23. 8. 52. 60.]

```

unknown

```
584     cord_individual_obj[indivial_i, :] = [24. 8. 79. 87.]  
585  
586     min(cord_individual_obj[:, 3]) = 49.0  
587     historl_G_best_iter[iter, 3] = 49.0  
588 Begin iteration:  
589  
590 iter = 18  
591     cord_individual_obj[indivial_i, :] = [ 0. 8. 84. 92.]  
592     cord_individual_obj[indivial_i, :] = [ 1. 8. 41. 49.]  
593     cord_individual_obj[indivial_i, :] = [ 2. 8. 75. 83.]  
594     cord_individual_obj[indivial_i, :] = [ 3. 8. 86. 94.]  
595     cord_individual_obj[indivial_i, :] = [ 4. 11. 117. 128.]  
596     cord_individual_obj[indivial_i, :] = [ 5. 9. 91. 100.]  
597     cord_individual_obj[indivial_i, :] = [ 6. 9. 96. 105.]  
598     cord_individual_obj[indivial_i, :] = [ 7. 10. 67. 77.]  
599     cord_individual_obj[indivial_i, :] = [ 8. 8. 94. 102.]  
600     cord_individual_obj[indivial_i, :] = [ 9. 8. 79. 87.]  
601     cord_individual_obj[indivial_i, :] = [ 10. 8. 94. 102.]  
602     cord_individual_obj[indivial_i, :] = [ 11. 9. 66. 75.]  
603     cord_individual_obj[indivial_i, :] = [ 12. 7. 69. 76.]  
604     cord_individual_obj[indivial_i, :] = [ 13. 9. 107. 116.]  
605     cord_individual_obj[indivial_i, :] = [ 14. 9. 68. 77.]  
606     cord_individual_obj[indivial_i, :] = [ 15. 8. 122. 130.]  
607     cord_individual_obj[indivial_i, :] = [ 16. 8. 63. 71.]  
608     cord_individual_obj[indivial_i, :] = [ 17. 8. 59. 67.]  
609     cord_individual_obj[indivial_i, :] = [ 18. 7. 89. 96.]  
610     cord_individual_obj[indivial_i, :] = [ 19. 8. 92. 100.]  
611     cord_individual_obj[indivial_i, :] = [ 20. 9. 74. 83.]  
612     cord_individual_obj[indivial_i, :] = [ 21. 11. 80. 91.]  
613     cord_individual_obj[indivial_i, :] = [ 22. 7. 59. 66.]  
614     cord_individual_obj[indivial_i, :] = [ 23. 9. 125. 134.]  
615     cord_individual_obj[indivial_i, :] = [ 24. 7. 107. 114.]  
616  
617     min(cord_individual_obj[:, 3]) = 49.0  
618     historl_G_best_iter[iter, 3] = 49.0  
619 Begin iteration:  
620  
621 iter = 19  
622     cord_individual_obj[indivial_i, :] = [ 0. 11. 80. 91.]  
623     cord_individual_obj[indivial_i, :] = [ 1. 9. 146. 155.]  
624     cord_individual_obj[indivial_i, :] = [ 2. 8. 113. 121.]  
625     cord_individual_obj[indivial_i, :] = [ 3. 7. 83. 90.]  
626     cord_individual_obj[indivial_i, :] = [ 4. 7. 139. 146.]  
627     cord_individual_obj[indivial_i, :] = [ 5. 11. 111. 122.]  
628     cord_individual_obj[indivial_i, :] = [ 6. 8. 90. 98.]  
629     cord_individual_obj[indivial_i, :] = [ 7. 9. 100. 109.]  
630     cord_individual_obj[indivial_i, :] = [ 8. 8. 123. 131.]  
631     cord_individual_obj[indivial_i, :] = [ 9. 8. 63. 71.]  
632     cord_individual_obj[indivial_i, :] = [ 10. 11. 110. 121.]  
633     cord_individual_obj[indivial_i, :] = [ 11. 8. 69. 77.]  
634     cord_individual_obj[indivial_i, :] = [ 12. 8. 58. 66.]  
635     cord_individual_obj[indivial_i, :] = [ 13. 9. 65. 74.]  
636     cord_individual_obj[indivial_i, :] = [ 14. 10. 61. 71.]  
637     cord_individual_obj[indivial_i, :] = [ 15. 8. 102. 110.]  
638     cord_individual_obj[indivial_i, :] = [ 16. 10. 109. 119.]  
639     cord_individual_obj[indivial_i, :] = [ 17. 9. 59. 68.]  
640     cord_individual_obj[indivial_i, :] = [ 18. 9. 98. 107.]  
641     cord_individual_obj[indivial_i, :] = [ 19. 9. 85. 94.]  
642     cord_individual_obj[indivial_i, :] = [ 20. 7. 77. 84.]  
643     cord_individual_obj[indivial_i, :] = [ 21. 10. 66. 76.]  
644     cord_individual_obj[indivial_i, :] = [ 22. 8. 121. 129.]  
645     cord_individual_obj[indivial_i, :] = [ 23. 8. 41. 49.]  
646     cord_individual_obj[indivial_i, :] = [ 24. 9. 138. 147.]  
647  
648     min(cord_individual_obj[:, 3]) = 49.0  
649     historl_G_best_iter[iter, 3] = 49.0  
650 Begin iteration:  
651  
652 iter = 20  
653     cord_individual_obj[indivial_i, :] = [ 0. 10. 102. 112.]  
654     cord_individual_obj[indivial_i, :] = [ 1. 8. 41. 49.]  
655     cord_individual_obj[indivial_i, :] = [ 2. 9. 68. 77.]  
656     cord_individual_obj[indivial_i, :] = [ 3. 12. 113. 125.]  
657     cord_individual_obj[indivial_i, :] = [ 4. 8. 56. 64.]  
658     cord_individual_obj[indivial_i, :] = [ 5. 7. 56. 63.]  
659     cord_individual_obj[indivial_i, :] = [ 6. 9. 74. 83.]  
660     cord_individual_obj[indivial_i, :] = [ 7. 10. 90. 100.]  
661     cord_individual_obj[indivial_i, :] = [ 8. 10. 178. 188.]  
662     cord_individual_obj[indivial_i, :] = [ 9. 8. 57. 65.]  
663     cord_individual_obj[indivial_i, :] = [ 10. 9. 58. 67.]  
664     cord_individual_obj[indivial_i, :] = [ 11. 10. 98. 108.]  
665     cord_individual_obj[indivial_i, :] = [ 12. 9. 119. 128.]  
666     cord_individual_obj[indivial_i, :] = [ 13. 9. 84. 93.]  
667     cord_individual_obj[indivial_i, :] = [ 14. 10. 98. 108.]
```

```

668 cord_individual_obj[indivial_i,:] = [ 15. 8. 111. 119.]
669 cord_individual_obj[indivial_i,:] = [16. 9. 78. 87.]
670 cord_individual_obj[indivial_i,:] = [17. 8. 73. 81.]
671 cord_individual_obj[indivial_i,:] = [18. 8. 79. 87.]
672 cord_individual_obj[indivial_i,:] = [19. 7. 70. 77.]
673 cord_individual_obj[indivial_i,:] = [20. 9. 92. 101.]
674 cord_individual_obj[indivial_i,:] = [21. 8. 64. 72.]
675 cord_individual_obj[indivial_i,:] = [22. 8. 131. 139.]
676 cord_individual_obj[indivial_i,:] = [23. 8. 76. 84.]
677 cord_individual_obj[indivial_i,:] = [24. 7. 106. 113.]
678
679 min(cord_individual_obj[:, 3]) = 49.0
680 historl_G_best_iter[iter, 3] = 49.0
681 Iteration calculate over
682
683
684
685
686 All item are in Bin and:
687 Bin area = 1080
688 Real_area = 174.0
689 Proportion_of_area = 0.1611111111111112
690 BEST_CHROM =
691 berth: [ 2.5 9.5 15. 24. 8. 4.5 17.5 15.5 8. 2. 22.5 8. 3.5 11.
692 15.5]
693 time: [0. 0. 2. 0. 1. 6. 0. 1. 4. 2. 3. 2. 5. 5. 4. 6.]
694 num_QC: [2. 5. 4. 2. 4. 2. 3. 3. 5. 1. 2. 5. 6. 2. 2. 4.]
695 Objective function values and some other indicators:
696 Obj0 = 8.00          Obj1 = 41.00          Obj0 + Obj1 = 49.00
697 Total movement of crane: 0.00
698 Total waiting time in berth position: 41.00
699 Total index of q during berthing: 683.00
700 Specific arrangement for each vessel:
701 V_id: 0      li: 5.0      xi: 2.5      bow of i: 0.0      tail of i: 5.0      gama_i0: 0.0      gama_i1: 1.0
    .           gama_i1 + 1: 2.0      gama_i1 - gama_i0: 1.0      duration_time_i: 2.0      demand_i: 80.0      work load_i:
80.0      work load gap_i: 0
702 V_id: 1      li: 9.0      xi: 9.5      bow of i: 5.0      tail of i: 14.0      gama_i0: 0.0      gama_i1: 0.0
    .           gama_i1 + 1: 1.0      gama_i1 - gama_i0: 0.0      duration_time_i: 1.0      demand_i: 60.0      work load_i:
60.0      work load gap_i: 0
703 V_id: 2      li: 6.0      xi: 15.0      bow of i: 12.0      tail of i: 18.0      gama_i0: 2.0      gama_i1: 3
    .           gama_i1 + 1: 4.0      gama_i1 - gama_i0: 1.0      duration_time_i: 2.0      demand_i: 100.0      work
load_i: 100.0      work load gap_i: 0
704 V_id: 3      li: 6.0      xi: 24.0      bow of i: 21.0      tail of i: 27.0      gama_i0: 0.0      gama_i1: 2
    .           gama_i1 + 1: 3.0      gama_i1 - gama_i0: 2.0      duration_time_i: 3.0      demand_i: 120.0      work
load_i: 120.0      work load gap_i: 0
705 V_id: 4      li: 6.0      xi: 8.0      bow of i: 5.0      tail of i: 11.0      gama_i0: 1.0      gama_i1: 1.0
    .           gama_i1 + 1: 2.0      gama_i1 - gama_i0: 0.0      duration_time_i: 1.0      demand_i: 80.0      work load_i:
80.0      work load gap_i: 0
706 V_id: 5      li: 9.0      xi: 4.5      bow of i: 0.0      tail of i: 9.0      gama_i0: 6.0      gama_i1: 8.0
    .           gama_i1 + 1: 9.0      gama_i1 - gama_i0: 2.0      duration_time_i: 3.0      demand_i: 100.0      work load_i:
100.0      work load gap_i: 0
707 V_id: 6      li: 7.0      xi: 17.5      bow of i: 14.0      tail of i: 21.0      gama_i0: 0.0      gama_i1: 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: 7      li: 9.0      xi: 15.5      bow of i: 11.0      tail of i: 20.0      gama_i0: 1.0      gama_i1: 1
    .           gama_i1 + 1: 2.0      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
709 V_id: 8      li: 8.0      xi: 8.0      bow of i: 4.0      tail of i: 12.0      gama_i0: 4.0      gama_i1: 4.0
    .           gama_i1 + 1: 5.0      gama_i1 - gama_i0: 0.0      duration_time_i: 1.0      demand_i: 80.0      work load_i:
80.0      work load gap_i: 0
710 V_id: 9      li: 4.0      xi: 2.0      bow of i: 0.0      tail of i: 4.0      gama_i0: 2.0      gama_i1: 4.0
    .           gama_i1 + 1: 5.0      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
711 V_id: 10     li: 9.0      xi: 22.5      bow of i: 18.0      tail of i: 27.0      gama_i0: 3.0      gama_i1
    : 6.0       gama_i1 + 1: 7.0      gama_i1 - gama_i0: 3.0      duration_time_i: 4.0      demand_i: 140.0      work
load_i: 140.0      work load gap_i: 0
712 V_id: 11     li: 8.0      xi: 8.0      bow of i: 4.0      tail of i: 12.0      gama_i0: 2.0      gama_i1: 3
    .           gama_i1 + 1: 4.0      gama_i1 - gama_i0: 1.0      duration_time_i: 2.0      demand_i: 140.0      work
load_i: 140.0      work load gap_i: 0
713 V_id: 12     li: 7.0      xi: 3.5      bow of i: 0.0      tail of i: 7.0      gama_i0: 5.0      gama_i1: 5.0
    .           gama_i1 + 1: 6.0      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
714 V_id: 13     li: 4.0      xi: 11.0      bow of i: 9.0      tail of i: 13.0      gama_i0: 5.0      gama_i1
    : 7.0       gama_i1 + 1: 8.0      gama_i1 - gama_i0: 2.0      duration_time_i: 3.0      demand_i: 100.0      work
load_i: 100.0      work load gap_i: 0
715 V_id: 14     li: 4.0      xi: 15.0      bow of i: 13.0      tail of i: 17.0      gama_i0: 4.0      gama_i1
    : 5.0       gama_i1 + 1: 6.0      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
716 V_id: 15     li: 5.0      xi: 15.5      bow of i: 13.0      tail of i: 18.0      gama_i0: 6.0      gama_i1
    : 6.0       gama_i1 + 1: 7.0      gama_i1 - gama_i0: 0.0      duration_time_i: 1.0      demand_i: 80.0      work
load_i: 80.0      work load gap_i: 0
717
718 Algorithm finished and the total CPU time: 494 s
719 End

```