

unknown

```

80 cord_individual_obj[indivial_i,:] = [ 16. 9. 99. 108.]
81 cord_individual_obj[indivial_i,:] = [ 17. 10. 130. 140.]
82 cord_individual_obj[indivial_i,:] = [ 18. 10. 151. 161.]
83 cord_individual_obj[indivial_i,:] = [19. 8. 84. 92.]
84 cord_individual_obj[indivial_i,:] = [ 20. 9. 125. 134.]
85 cord_individual_obj[indivial_i,:] = [ 21. 9. 131. 140.]
86 cord_individual_obj[indivial_i,:] = [ 22. 9. 119. 128.]
87 cord_individual_obj[indivial_i,:] = [ 23. 10. 90. 100.]
88 cord_individual_obj[indivial_i,:] = [ 24. 8. 139. 147.]
89
90 min(cord_individual_obj[:,3]) = 68.0
91 historl_G_best_iter[iter, 3] = 68.0
92 Begin iteration:
93
94 iter = 2
95 cord_individual_obj[indivial_i,:] = [ 0. 9. 58. 67.]
96 cord_individual_obj[indivial_i,:] = [ 1. 9. 100. 109.]
97 cord_individual_obj[indivial_i,:] = [ 2. 9. 118. 127.]
98 cord_individual_obj[indivial_i,:] = [ 3. 8. 185. 193.]
99 cord_individual_obj[indivial_i,:] = [ 4. 9. 81. 90.]
100 cord_individual_obj[indivial_i,:] = [ 5. 11. 115. 126.]
101 cord_individual_obj[indivial_i,:] = [ 6. 7. 116. 123.]
102 cord_individual_obj[indivial_i,:] = [ 7. 9. 112. 121.]
103 cord_individual_obj[indivial_i,:] = [ 8. 9. 101. 110.]
104 cord_individual_obj[indivial_i,:] = [ 9. 12. 134. 146.]
105 cord_individual_obj[indivial_i,:] = [10. 12. 92. 104.]
106 cord_individual_obj[indivial_i,:] = [11. 10. 133. 143.]
107 cord_individual_obj[indivial_i,:] = [12. 10. 73. 83.]
108 cord_individual_obj[indivial_i,:] = [13. 9. 97. 106.]
109 cord_individual_obj[indivial_i,:] = [14. 9. 105. 114.]
110 cord_individual_obj[indivial_i,:] = [15. 9. 85. 94.]
111 cord_individual_obj[indivial_i,:] = [16. 10. 94. 104.]
112 cord_individual_obj[indivial_i,:] = [17. 11. 99. 110.]
113 cord_individual_obj[indivial_i,:] = [18. 9. 59. 68.]
114 cord_individual_obj[indivial_i,:] = [19. 8. 152. 160.]
115 cord_individual_obj[indivial_i,:] = [20. 9. 94. 103.]
116 cord_individual_obj[indivial_i,:] = [21. 9. 117. 126.]
117 cord_individual_obj[indivial_i,:] = [22. 9. 54. 63.]
118 cord_individual_obj[indivial_i,:] = [23. 9. 178. 187.]
119 cord_individual_obj[indivial_i,:] = [24. 10. 112. 122.]
120
121 min(cord_individual_obj[:,3]) = 63.0
122 historl_G_best_iter[iter, 3] = 63.0
123 Begin iteration:
124
125 iter = 3
126 cord_individual_obj[indivial_i,:] = [ 0. 8. 99. 107.]
127 cord_individual_obj[indivial_i,:] = [ 1. 9. 93. 102.]
128 cord_individual_obj[indivial_i,:] = [ 2. 9. 123. 132.]
129 cord_individual_obj[indivial_i,:] = [ 3. 9. 54. 63.]
130 cord_individual_obj[indivial_i,:] = [ 4. 8. 126. 134.]
131 cord_individual_obj[indivial_i,:] = [ 5. 9. 80. 89.]
132 cord_individual_obj[indivial_i,:] = [ 6. 8. 65. 73.]
133 cord_individual_obj[indivial_i,:] = [ 7. 9. 70. 79.]
134 cord_individual_obj[indivial_i,:] = [ 8. 10. 192. 202.]
135 cord_individual_obj[indivial_i,:] = [ 9. 10. 105. 115.]
136 cord_individual_obj[indivial_i,:] = [10. 10. 110. 120.]
137 cord_individual_obj[indivial_i,:] = [11. 8. 136. 144.]
138 cord_individual_obj[indivial_i,:] = [12. 10. 110. 120.]
139 cord_individual_obj[indivial_i,:] = [13. 9. 90. 99.]
140 cord_individual_obj[indivial_i,:] = [14. 9. 102. 111.]
141 cord_individual_obj[indivial_i,:] = [15. 10. 54. 64.]
142 cord_individual_obj[indivial_i,:] = [16. 9. 136. 145.]
143 cord_individual_obj[indivial_i,:] = [17. 10. 94. 104.]
144 cord_individual_obj[indivial_i,:] = [18. 11. 108. 119.]
145 cord_individual_obj[indivial_i,:] = [19. 9. 88. 97.]
146 cord_individual_obj[indivial_i,:] = [20. 8. 107. 115.]
147 cord_individual_obj[indivial_i,:] = [21. 9. 105. 114.]
148 cord_individual_obj[indivial_i,:] = [22. 11. 96. 107.]
149 cord_individual_obj[indivial_i,:] = [23. 9. 128. 137.]
150 cord_individual_obj[indivial_i,:] = [24. 8. 63. 71.]
151
152 min(cord_individual_obj[:,3]) = 63.0
153 historl_G_best_iter[iter, 3] = 63.0
154 Begin iteration:
155
156 iter = 4
157 cord_individual_obj[indivial_i,:] = [ 0. 11. 105. 116.]
158 cord_individual_obj[indivial_i,:] = [ 1. 9. 133. 142.]
159 cord_individual_obj[indivial_i,:] = [ 2. 9. 183. 192.]
160 cord_individual_obj[indivial_i,:] = [ 3. 10. 147. 157.]
161 cord_individual_obj[indivial_i,:] = [ 4. 9. 66. 75.]
162 cord_individual_obj[indivial_i,:] = [ 5. 8. 112. 120.]
163 cord_individual_obj[indivial_i,:] = [ 6. 11. 95. 106.]

```

```

164 cord_individual_obj[indivial_i,:] = [ 7. 10. 103. 113.]
165 cord_individual_obj[indivial_i,:] = [ 8. 9. 54. 63.]
166 cord_individual_obj[indivial_i,:] = [ 9. 9. 98. 107.]
167 cord_individual_obj[indivial_i,:] = [10. 8. 156. 164.]
168 cord_individual_obj[indivial_i,:] = [11. 10. 80. 90.]
169 cord_individual_obj[indivial_i,:] = [12. 9. 97. 106.]
170 cord_individual_obj[indivial_i,:] = [13. 9. 149. 158.]
171 cord_individual_obj[indivial_i,:] = [14. 10. 109. 119.]
172 cord_individual_obj[indivial_i,:] = [15. 9. 109. 118.]
173 cord_individual_obj[indivial_i,:] = [16. 11. 90. 101.]
174 cord_individual_obj[indivial_i,:] = [17. 9. 86. 95.]
175 cord_individual_obj[indivial_i,:] = [18. 9. 135. 144.]
176 cord_individual_obj[indivial_i,:] = [19. 11. 93. 104.]
177 cord_individual_obj[indivial_i,:] = [20. 10. 126. 136.]
178 cord_individual_obj[indivial_i,:] = [21. 9. 128. 137.]
179 cord_individual_obj[indivial_i,:] = [22. 10. 93. 103.]
180 cord_individual_obj[indivial_i,:] = [23. 9. 67. 76.]
181 cord_individual_obj[indivial_i,:] = [24. 8. 112. 120.]
182
183 min(cord_individual_obj[:,3]) = 63.0
184 historl_G_best_iter[iter,3] = 63.0
185 Begin iteration:
186
187 iter = 5
188 cord_individual_obj[indivial_i,:] = [ 0. 9. 110. 119.]
189 cord_individual_obj[indivial_i,:] = [ 1. 9. 177. 186.]
190 cord_individual_obj[indivial_i,:] = [ 2. 9. 54. 63.]
191 cord_individual_obj[indivial_i,:] = [ 3. 8. 94. 102.]
192 cord_individual_obj[indivial_i,:] = [ 4. 9. 154. 163.]
193 cord_individual_obj[indivial_i,:] = [ 5. 9. 94. 103.]
194 cord_individual_obj[indivial_i,:] = [ 6. 9. 61. 70.]
195 cord_individual_obj[indivial_i,:] = [ 7. 11. 103. 114.]
196 cord_individual_obj[indivial_i,:] = [ 8. 10. 59. 69.]
197 cord_individual_obj[indivial_i,:] = [ 9. 9. 159. 168.]
198 cord_individual_obj[indivial_i,:] = [10. 8. 70. 78.]
199 cord_individual_obj[indivial_i,:] = [11. 10. 98. 108.]
200 cord_individual_obj[indivial_i,:] = [12. 9. 109. 118.]
201 cord_individual_obj[indivial_i,:] = [13. 10. 97. 107.]
202 cord_individual_obj[indivial_i,:] = [14. 8. 103. 111.]
203 cord_individual_obj[indivial_i,:] = [15. 8. 118. 126.]
204 cord_individual_obj[indivial_i,:] = [16. 10. 140. 150.]
205 cord_individual_obj[indivial_i,:] = [17. 10. 111. 121.]
206 cord_individual_obj[indivial_i,:] = [18. 10. 138. 148.]
207 cord_individual_obj[indivial_i,:] = [19. 9. 83. 92.]
208 cord_individual_obj[indivial_i,:] = [20. 9. 138. 147.]
209 cord_individual_obj[indivial_i,:] = [21. 10. 131. 141.]
210 cord_individual_obj[indivial_i,:] = [22. 8. 100. 108.]
211 cord_individual_obj[indivial_i,:] = [23. 11. 126. 137.]
212 cord_individual_obj[indivial_i,:] = [24. 10. 93. 103.]
213
214 min(cord_individual_obj[:,3]) = 63.0
215 historl_G_best_iter[iter,3] = 63.0
216 Begin iteration:
217
218 iter = 6
219 cord_individual_obj[indivial_i,:] = [ 0. 8. 160. 168.]
220 cord_individual_obj[indivial_i,:] = [ 1. 9. 54. 63.]
221 cord_individual_obj[indivial_i,:] = [ 2. 9. 134. 143.]
222 cord_individual_obj[indivial_i,:] = [ 3. 9. 124. 133.]
223 cord_individual_obj[indivial_i,:] = [ 4. 8. 108. 116.]
224 cord_individual_obj[indivial_i,:] = [ 5. 8. 121. 129.]
225 cord_individual_obj[indivial_i,:] = [ 6. 9. 112. 121.]
226 cord_individual_obj[indivial_i,:] = [ 7. 9. 60. 69.]
227 cord_individual_obj[indivial_i,:] = [ 8. 7. 99. 106.]
228 cord_individual_obj[indivial_i,:] = [ 9. 9. 101. 110.]
229 cord_individual_obj[indivial_i,:] = [10. 10. 174. 184.]
230 cord_individual_obj[indivial_i,:] = [11. 7. 100. 107.]
231 cord_individual_obj[indivial_i,:] = [12. 9. 110. 119.]
232 cord_individual_obj[indivial_i,:] = [13. 10. 71. 81.]
233 cord_individual_obj[indivial_i,:] = [14. 10. 102. 112.]
234 cord_individual_obj[indivial_i,:] = [15. 8. 85. 93.]
235 cord_individual_obj[indivial_i,:] = [16. 8. 123. 131.]
236 cord_individual_obj[indivial_i,:] = [17. 9. 165. 174.]
237 cord_individual_obj[indivial_i,:] = [18. 11. 100. 111.]
238 cord_individual_obj[indivial_i,:] = [19. 10. 125. 135.]
239 cord_individual_obj[indivial_i,:] = [20. 10. 149. 159.]
240 cord_individual_obj[indivial_i,:] = [21. 8. 100. 108.]
241 cord_individual_obj[indivial_i,:] = [22. 10. 101. 111.]
242 cord_individual_obj[indivial_i,:] = [23. 8. 114. 122.]
243 cord_individual_obj[indivial_i,:] = [24. 9. 89. 98.]
244
245 min(cord_individual_obj[:,3]) = 63.0
246 historl_G_best_iter[iter,3] = 63.0
247 Begin iteration:

```

```

248
249 iter = 7
250 cord_individual_obj[indivial_i, :] = [ 0.  8. 113. 121.]
251 cord_individual_obj[indivial_i, :] = [ 1. 11. 154. 165.]
252 cord_individual_obj[indivial_i, :] = [ 2.  8. 121. 129.]
253 cord_individual_obj[indivial_i, :] = [ 3. 10. 108. 118.]
254 cord_individual_obj[indivial_i, :] = [ 4.  8. 112. 120.]
255 cord_individual_obj[indivial_i, :] = [ 5.  8. 98. 106.]
256 cord_individual_obj[indivial_i, :] = [ 6. 10. 58. 68.]
257 cord_individual_obj[indivial_i, :] = [ 7.  8. 140. 148.]
258 cord_individual_obj[indivial_i, :] = [ 8.  9. 75. 84.]
259 cord_individual_obj[indivial_i, :] = [ 9. 10. 116. 126.]
260 cord_individual_obj[indivial_i, :] = [10.  9. 54. 63.]
261 cord_individual_obj[indivial_i, :] = [11. 11. 100. 111.]
262 cord_individual_obj[indivial_i, :] = [12. 12. 79. 91.]
263 cord_individual_obj[indivial_i, :] = [13.  9. 137. 146.]
264 cord_individual_obj[indivial_i, :] = [14. 11. 113. 124.]
265 cord_individual_obj[indivial_i, :] = [15.  9. 120. 129.]
266 cord_individual_obj[indivial_i, :] = [16. 10. 142. 152.]
267 cord_individual_obj[indivial_i, :] = [17. 11. 132. 143.]
268 cord_individual_obj[indivial_i, :] = [18. 12. 113. 125.]
269 cord_individual_obj[indivial_i, :] = [19. 10. 112. 122.]
270 cord_individual_obj[indivial_i, :] = [20. 10. 127. 137.]
271 cord_individual_obj[indivial_i, :] = [21.  9. 137. 146.]
272 cord_individual_obj[indivial_i, :] = [22.  8. 101. 109.]
273 cord_individual_obj[indivial_i, :] = [23.  9. 149. 158.]
274 cord_individual_obj[indivial_i, :] = [24.  9. 119. 128.]
275

276 min(cord_individual_obj[:, 3]) = 63.0
277 historl_G_best_iter[iter, 3] = 63.0
278 Begin iteration:
279
280 iter = 8
281 cord_individual_obj[indivial_i, :] = [ 0. 11. 123. 134.]
282 cord_individual_obj[indivial_i, :] = [ 1.  9. 54. 63.]
283 cord_individual_obj[indivial_i, :] = [ 2.  7. 143. 150.]
284 cord_individual_obj[indivial_i, :] = [ 3.  9. 86. 95.]
285 cord_individual_obj[indivial_i, :] = [ 4.  8. 80. 88.]
286 cord_individual_obj[indivial_i, :] = [ 5.  8. 109. 117.]
287 cord_individual_obj[indivial_i, :] = [ 6. 10. 64. 74.]
288 cord_individual_obj[indivial_i, :] = [ 7. 11. 118. 129.]
289 cord_individual_obj[indivial_i, :] = [ 8.  8. 100. 108.]
290 cord_individual_obj[indivial_i, :] = [ 9.  8. 114. 122.]
291 cord_individual_obj[indivial_i, :] = [10. 11. 104. 115.]
292 cord_individual_obj[indivial_i, :] = [11.  9. 147. 156.]
293 cord_individual_obj[indivial_i, :] = [12.  9. 135. 144.]
294 cord_individual_obj[indivial_i, :] = [13.  9. 105. 114.]
295 cord_individual_obj[indivial_i, :] = [14.  8. 97. 105.]
296 cord_individual_obj[indivial_i, :] = [15. 11. 148. 159.]
297 cord_individual_obj[indivial_i, :] = [16.  8. 143. 151.]
298 cord_individual_obj[indivial_i, :] = [17. 10. 160. 170.]
299 cord_individual_obj[indivial_i, :] = [18. 10. 69. 79.]
300 cord_individual_obj[indivial_i, :] = [19. 10. 148. 158.]
301 cord_individual_obj[indivial_i, :] = [20.  8. 153. 161.]
302 cord_individual_obj[indivial_i, :] = [21.  8. 124. 132.]
303 cord_individual_obj[indivial_i, :] = [22.  8. 117. 125.]
304 cord_individual_obj[indivial_i, :] = [23. 10. 152. 162.]
305 cord_individual_obj[indivial_i, :] = [24. 10. 110. 120.]
306

307 min(cord_individual_obj[:, 3]) = 63.0
308 historl_G_best_iter[iter, 3] = 63.0
309 Begin iteration:
310
311 iter = 9
312 cord_individual_obj[indivial_i, :] = [ 0.  9. 126. 135.]
313 cord_individual_obj[indivial_i, :] = [ 1.  9. 83. 92.]
314 cord_individual_obj[indivial_i, :] = [ 2.  8. 58. 66.]
315 cord_individual_obj[indivial_i, :] = [ 3. 10. 132. 142.]
316 cord_individual_obj[indivial_i, :] = [ 4.  8. 87. 95.]
317 cord_individual_obj[indivial_i, :] = [ 5.  8. 93. 101.]
318 cord_individual_obj[indivial_i, :] = [ 6.  9. 106. 115.]
319 cord_individual_obj[indivial_i, :] = [ 7. 11. 113. 124.]
320 cord_individual_obj[indivial_i, :] = [ 8.  9. 105. 114.]
321 cord_individual_obj[indivial_i, :] = [ 9. 10. 88. 98.]
322 cord_individual_obj[indivial_i, :] = [10. 10. 98. 108.]
323 cord_individual_obj[indivial_i, :] = [11. 11. 125. 136.]
324 cord_individual_obj[indivial_i, :] = [12.  9. 141. 150.]
325 cord_individual_obj[indivial_i, :] = [13. 11. 101. 112.]
326 cord_individual_obj[indivial_i, :] = [14. 11. 75. 86.]
327 cord_individual_obj[indivial_i, :] = [15.  9. 98. 107.]
328 cord_individual_obj[indivial_i, :] = [16. 10. 97. 107.]
329 cord_individual_obj[indivial_i, :] = [17.  9. 54. 63.]
330 cord_individual_obj[indivial_i, :] = [18.  9. 106. 115.]
331 cord_individual_obj[indivial_i, :] = [19.  9. 96. 105.]

```

```

332     cord_individual_obj[indivial_i, :] = [ 20.  9. 116. 125.]
333     cord_individual_obj[indivial_i, :] = [ 21.  9.  98. 107.]
334     cord_individual_obj[indivial_i, :] = [ 22.  9. 106. 115.]
335     cord_individual_obj[indivial_i, :] = [ 23.  9. 118. 127.]
336     cord_individual_obj[indivial_i, :] = [ 24.  9. 84. 93.]
337
338 min(cord_individual_obj[:, 3]) = 63.0
339 histol_G_best_iter[iter, 3] = 63.0
340 Begin iteration:
341
342 iter = 10
343     cord_individual_obj[indivial_i, :] = [ 0.  8. 92. 100.]
344     cord_individual_obj[indivial_i, :] = [ 1. 10. 114. 124.]
345     cord_individual_obj[indivial_i, :] = [ 2.  8. 115. 123.]
346     cord_individual_obj[indivial_i, :] = [ 3.  8. 115. 123.]
347     cord_individual_obj[indivial_i, :] = [ 4.  9. 128. 137.]
348     cord_individual_obj[indivial_i, :] = [ 5.  7. 134. 141.]
349     cord_individual_obj[indivial_i, :] = [ 6. 10. 129. 139.]
350     cord_individual_obj[indivial_i, :] = [ 7. 11. 96. 107.]
351     cord_individual_obj[indivial_i, :] = [ 8. 10. 128. 138.]
352     cord_individual_obj[indivial_i, :] = [ 9. 11. 124. 135.]
353     cord_individual_obj[indivial_i, :] = [10. 10. 128. 138.]
354     cord_individual_obj[indivial_i, :] = [11. 11. 110. 121.]
355     cord_individual_obj[indivial_i, :] = [12. 9. 54. 63.]
356     cord_individual_obj[indivial_i, :] = [13. 8. 138. 146.]
357     cord_individual_obj[indivial_i, :] = [14. 10. 97. 107.]
358     cord_individual_obj[indivial_i, :] = [15. 8. 122. 130.]
359     cord_individual_obj[indivial_i, :] = [16. 10. 95. 105.]
360     cord_individual_obj[indivial_i, :] = [17. 10. 74. 84.]
361     cord_individual_obj[indivial_i, :] = [18. 10. 54. 64.]
362     cord_individual_obj[indivial_i, :] = [19. 10. 154. 164.]
363     cord_individual_obj[indivial_i, :] = [20. 10. 124. 134.]
364     cord_individual_obj[indivial_i, :] = [21. 10. 131. 141.]
365     cord_individual_obj[indivial_i, :] = [22. 9. 144. 153.]
366     cord_individual_obj[indivial_i, :] = [23. 9. 106. 115.]
367     cord_individual_obj[indivial_i, :] = [24. 9. 179. 188.]
368
369 min(cord_individual_obj[:, 3]) = 63.0
370 histol_G_best_iter[iter, 3] = 63.0
371 Begin iteration:
372
373 iter = 11
374     cord_individual_obj[indivial_i, :] = [ 0.  9. 123. 132.]
375     cord_individual_obj[indivial_i, :] = [ 1. 10. 133. 143.]
376     cord_individual_obj[indivial_i, :] = [ 2.  8. 127. 135.]
377     cord_individual_obj[indivial_i, :] = [ 3.  9. 117. 126.]
378     cord_individual_obj[indivial_i, :] = [ 4.  9. 133. 142.]
379     cord_individual_obj[indivial_i, :] = [ 5.  8. 64. 72.]
380     cord_individual_obj[indivial_i, :] = [ 6. 10. 153. 163.]
381     cord_individual_obj[indivial_i, :] = [ 7. 10. 92. 102.]
382     cord_individual_obj[indivial_i, :] = [ 8.  8. 118. 126.]
383     cord_individual_obj[indivial_i, :] = [ 9.  9. 72. 81.]
384     cord_individual_obj[indivial_i, :] = [10. 11. 90. 101.]
385     cord_individual_obj[indivial_i, :] = [11. 11. 120. 131.]
386     cord_individual_obj[indivial_i, :] = [12. 10. 100. 110.]
387     cord_individual_obj[indivial_i, :] = [13. 10. 127. 137.]
388     cord_individual_obj[indivial_i, :] = [14. 10. 122. 132.]
389     cord_individual_obj[indivial_i, :] = [15. 8. 173. 181.]
390     cord_individual_obj[indivial_i, :] = [16. 10. 142. 152.]
391     cord_individual_obj[indivial_i, :] = [17. 8. 72. 80.]
392     cord_individual_obj[indivial_i, :] = [18. 10. 140. 150.]
393     cord_individual_obj[indivial_i, :] = [19. 9. 150. 159.]
394     cord_individual_obj[indivial_i, :] = [20. 9. 135. 144.]
395     cord_individual_obj[indivial_i, :] = [21. 10. 152. 162.]
396     cord_individual_obj[indivial_i, :] = [22. 12. 119. 131.]
397     cord_individual_obj[indivial_i, :] = [23. 11. 86. 97.]
398     cord_individual_obj[indivial_i, :] = [24. 9. 54. 63.]
399
400 min(cord_individual_obj[:, 3]) = 63.0
401 histol_G_best_iter[iter, 3] = 63.0
402 Begin iteration:
403
404 iter = 12
405     cord_individual_obj[indivial_i, :] = [ 0.  8. 156. 164.]
406     cord_individual_obj[indivial_i, :] = [ 1. 12. 69. 81.]
407     cord_individual_obj[indivial_i, :] = [ 2.  8. 160. 168.]
408     cord_individual_obj[indivial_i, :] = [ 3.  7. 148. 155.]
409     cord_individual_obj[indivial_i, :] = [ 4.  8. 108. 116.]
410     cord_individual_obj[indivial_i, :] = [ 5.  9. 125. 134.]
411     cord_individual_obj[indivial_i, :] = [ 6.  9. 121. 130.]
412     cord_individual_obj[indivial_i, :] = [ 7.  9. 103. 112.]
413     cord_individual_obj[indivial_i, :] = [ 8.  9. 97. 106.]
414     cord_individual_obj[indivial_i, :] = [ 9.  9. 93. 102.]
415     cord_individual_obj[indivial_i, :] = [10.  9. 135. 144.]

```

```

416 cord_individual_obj[indivial_i,:] = [ 11. 11. 159. 170.]
417 cord_individual_obj[indivial_i,:] = [ 12. 9. 130. 139.]
418 cord_individual_obj[indivial_i,:] = [13. 12. 82. 94.]
419 cord_individual_obj[indivial_i,:] = [ 14. 11. 136. 147.]
420 cord_individual_obj[indivial_i,:] = [15. 9. 54. 63.]
421 cord_individual_obj[indivial_i,:] = [ 16. 10. 105. 115.]
422 cord_individual_obj[indivial_i,:] = [ 17. 10. 108. 118.]
423 cord_individual_obj[indivial_i,:] = [ 18. 9. 111. 120.]
424 cord_individual_obj[indivial_i,:] = [ 19. 8. 150. 158.]
425 cord_individual_obj[indivial_i,:] = [ 20. 9. 109. 118.]
426 cord_individual_obj[indivial_i,:] = [ 21. 10. 85. 95.]
427 cord_individual_obj[indivial_i,:] = [ 22. 9. 108. 117.]
428 cord_individual_obj[indivial_i,:] = [ 23. 9. 97. 106.]
429 cord_individual_obj[indivial_i,:] = [ 24. 9. 101. 110.]
430
431 min(cord_individual_obj[:,3]) = 63.0
432 histol_G_best_iter[iter,3] = 63.0
433 Begin iteration:
434
435 iter = 13
436 cord_individual_obj[indivial_i,:] = [ 0. 9. 138. 147.]
437 cord_individual_obj[indivial_i,:] = [ 1. 8. 127. 135.]
438 cord_individual_obj[indivial_i,:] = [ 2. 8. 129. 137.]
439 cord_individual_obj[indivial_i,:] = [ 3. 9. 93. 102.]
440 cord_individual_obj[indivial_i,:] = [ 4. 8. 128. 136.]
441 cord_individual_obj[indivial_i,:] = [ 5. 7. 127. 134.]
442 cord_individual_obj[indivial_i,:] = [ 6. 11. 126. 137.]
443 cord_individual_obj[indivial_i,:] = [ 7. 11. 187. 198.]
444 cord_individual_obj[indivial_i,:] = [ 8. 8. 167. 175.]
445 cord_individual_obj[indivial_i,:] = [ 9. 10. 84. 94.]
446 cord_individual_obj[indivial_i,:] = [10. 12. 93. 105.]
447 cord_individual_obj[indivial_i,:] = [11. 9. 54. 63.]
448 cord_individual_obj[indivial_i,:] = [12. 10. 112. 122.]
449 cord_individual_obj[indivial_i,:] = [13. 8. 79. 87.]
450 cord_individual_obj[indivial_i,:] = [14. 10. 81. 91.]
451 cord_individual_obj[indivial_i,:] = [15. 7. 93. 100.]
452 cord_individual_obj[indivial_i,:] = [16. 9. 145. 154.]
453 cord_individual_obj[indivial_i,:] = [17. 9. 138. 147.]
454 cord_individual_obj[indivial_i,:] = [18. 9. 146. 155.]
455 cord_individual_obj[indivial_i,:] = [19. 8. 112. 120.]
456 cord_individual_obj[indivial_i,:] = [20. 13. 133. 146.]
457 cord_individual_obj[indivial_i,:] = [21. 9. 100. 109.]
458 cord_individual_obj[indivial_i,:] = [22. 8. 155. 163.]
459 cord_individual_obj[indivial_i,:] = [23. 9. 99. 108.]
460 cord_individual_obj[indivial_i,:] = [24. 9. 85. 94.]
461
462 min(cord_individual_obj[:,3]) = 63.0
463 histol_G_best_iter[iter,3] = 63.0
464 Begin iteration:
465
466 iter = 14
467 cord_individual_obj[indivial_i,:] = [ 0. 8. 89. 97.]
468 cord_individual_obj[indivial_i,:] = [ 1. 10. 128. 138.]
469 cord_individual_obj[indivial_i,:] = [ 2. 9. 123. 132.]
470 cord_individual_obj[indivial_i,:] = [ 3. 11. 111. 122.]
471 cord_individual_obj[indivial_i,:] = [ 4. 8. 114. 122.]
472 cord_individual_obj[indivial_i,:] = [ 5. 9. 109. 118.]
473 cord_individual_obj[indivial_i,:] = [ 6. 10. 89. 99.]
474 cord_individual_obj[indivial_i,:] = [ 7. 9. 54. 63.]
475 cord_individual_obj[indivial_i,:] = [ 8. 7. 84. 91.]
476 cord_individual_obj[indivial_i,:] = [ 9. 10. 132. 142.]
477 cord_individual_obj[indivial_i,:] = [10. 9. 118. 127.]
478 cord_individual_obj[indivial_i,:] = [11. 13. 111. 124.]
479 cord_individual_obj[indivial_i,:] = [12. 10. 75. 85.]
480 cord_individual_obj[indivial_i,:] = [13. 12. 106. 118.]
481 cord_individual_obj[indivial_i,:] = [14. 9. 124. 133.]
482 cord_individual_obj[indivial_i,:] = [15. 8. 121. 129.]
483 cord_individual_obj[indivial_i,:] = [16. 11. 107. 118.]
484 cord_individual_obj[indivial_i,:] = [17. 11. 134. 145.]
485 cord_individual_obj[indivial_i,:] = [18. 10. 114. 124.]
486 cord_individual_obj[indivial_i,:] = [19. 9. 76. 85.]
487 cord_individual_obj[indivial_i,:] = [20. 10. 99. 109.]
488 cord_individual_obj[indivial_i,:] = [21. 9. 110. 119.]
489 cord_individual_obj[indivial_i,:] = [22. 11. 136. 147.]
490 cord_individual_obj[indivial_i,:] = [23. 9. 223. 232.]
491 cord_individual_obj[indivial_i,:] = [24. 8. 113. 121.]
492
493 min(cord_individual_obj[:,3]) = 63.0
494 histol_G_best_iter[iter,3] = 63.0
495 Begin iteration:
496
497 iter = 15
498 cord_individual_obj[indivial_i,:] = [ 0. 8. 86. 94.]
499 cord_individual_obj[indivial_i,:] = [ 1. 9. 127. 136.]

```

```

500 cord_individual_obj[indivial_i,:] = [ 2. 9. 134. 143.]
501 cord_individual_obj[indivial_i,:] = [ 3. 9. 110. 119.]
502 cord_individual_obj[indivial_i,:] = [ 4. 8. 114. 122.]
503 cord_individual_obj[indivial_i,:] = [ 5. 9. 73. 82.]
504 cord_individual_obj[indivial_i,:] = [ 6. 9. 132. 141.]
505 cord_individual_obj[indivial_i,:] = [ 7. 11. 157. 168.]
506 cord_individual_obj[indivial_i,:] = [ 8. 9. 112. 121.]
507 cord_individual_obj[indivial_i,:] = [ 9. 10. 102. 112.]
508 cord_individual_obj[indivial_i,:] = [ 10. 10. 128. 138.]
509 cord_individual_obj[indivial_i,:] = [ 11. 12. 124. 136.]
510 cord_individual_obj[indivial_i,:] = [ 12. 9. 94. 103.]
511 cord_individual_obj[indivial_i,:] = [ 13. 10. 123. 133.]
512 cord_individual_obj[indivial_i,:] = [ 14. 8. 79. 87.]
513 cord_individual_obj[indivial_i,:] = [ 15. 9. 109. 118.]
514 cord_individual_obj[indivial_i,:] = [ 16. 9. 125. 134.]
515 cord_individual_obj[indivial_i,:] = [ 17. 9. 130. 139.]
516 cord_individual_obj[indivial_i,:] = [ 18. 10. 144. 154.]
517 cord_individual_obj[indivial_i,:] = [ 19. 9. 192. 201.]
518 cord_individual_obj[indivial_i,:] = [ 20. 8. 129. 137.]
519 cord_individual_obj[indivial_i,:] = [ 21. 9. 112. 121.]
520 cord_individual_obj[indivial_i,:] = [ 22. 10. 91. 101.]
521 cord_individual_obj[indivial_i,:] = [ 23. 9. 54. 63.]
522 cord_individual_obj[indivial_i,:] = [ 24. 9. 103. 112.]
523
524 min(cord_individual_obj[:, 3]) = 63.0
525 histol_G_best_iter[iter, 3] = 63.0
526 Begin iteration:
527
528 iter = 16
529 cord_individual_obj[indivial_i,:] = [ 0. 9. 96. 105.]
530 cord_individual_obj[indivial_i,:] = [ 1. 9. 85. 94.]
531 cord_individual_obj[indivial_i,:] = [ 2. 8. 133. 141.]
532 cord_individual_obj[indivial_i,:] = [ 3. 10. 100. 110.]
533 cord_individual_obj[indivial_i,:] = [ 4. 9. 201. 210.]
534 cord_individual_obj[indivial_i,:] = [ 5. 10. 83. 93.]
535 cord_individual_obj[indivial_i,:] = [ 6. 10. 123. 133.]
536 cord_individual_obj[indivial_i,:] = [ 7. 10. 102. 112.]
537 cord_individual_obj[indivial_i,:] = [ 8. 8. 122. 130.]
538 cord_individual_obj[indivial_i,:] = [ 9. 9. 111. 120.]
539 cord_individual_obj[indivial_i,:] = [ 10. 12. 138. 150.]
540 cord_individual_obj[indivial_i,:] = [ 11. 12. 105. 117.]
541 cord_individual_obj[indivial_i,:] = [ 12. 10. 164. 174.]
542 cord_individual_obj[indivial_i,:] = [ 13. 10. 93. 103.]
543 cord_individual_obj[indivial_i,:] = [ 14. 10. 127. 137.]
544 cord_individual_obj[indivial_i,:] = [ 15. 7. 121. 128.]
545 cord_individual_obj[indivial_i,:] = [ 16. 10. 142. 152.]
546 cord_individual_obj[indivial_i,:] = [ 17. 9. 132. 141.]
547 cord_individual_obj[indivial_i,:] = [ 18. 10. 133. 143.]
548 cord_individual_obj[indivial_i,:] = [ 19. 9. 54. 63.]
549 cord_individual_obj[indivial_i,:] = [ 20. 9. 131. 140.]
550 cord_individual_obj[indivial_i,:] = [ 21. 8. 88. 96.]
551 cord_individual_obj[indivial_i,:] = [ 22. 10. 146. 156.]
552 cord_individual_obj[indivial_i,:] = [ 23. 9. 140. 149.]
553 cord_individual_obj[indivial_i,:] = [ 24. 9. 115. 124.]
554
555 min(cord_individual_obj[:, 3]) = 63.0
556 histol_G_best_iter[iter, 3] = 63.0
557 Begin iteration:
558
559 iter = 17
560 cord_individual_obj[indivial_i,:] = [ 0. 12. 136. 148.]
561 cord_individual_obj[indivial_i,:] = [ 1. 10. 138. 148.]
562 cord_individual_obj[indivial_i,:] = [ 2. 9. 81. 90.]
563 cord_individual_obj[indivial_i,:] = [ 3. 9. 97. 106.]
564 cord_individual_obj[indivial_i,:] = [ 4. 9. 54. 63.]
565 cord_individual_obj[indivial_i,:] = [ 5. 9. 101. 110.]
566 cord_individual_obj[indivial_i,:] = [ 6. 10. 117. 127.]
567 cord_individual_obj[indivial_i,:] = [ 7. 10. 108. 118.]
568 cord_individual_obj[indivial_i,:] = [ 8. 9. 94. 103.]
569 cord_individual_obj[indivial_i,:] = [ 9. 10. 164. 174.]
570 cord_individual_obj[indivial_i,:] = [ 10. 11. 102. 113.]
571 cord_individual_obj[indivial_i,:] = [ 11. 11. 63. 74.]
572 cord_individual_obj[indivial_i,:] = [ 12. 9. 114. 123.]
573 cord_individual_obj[indivial_i,:] = [ 13. 9. 163. 172.]
574 cord_individual_obj[indivial_i,:] = [ 14. 10. 94. 104.]
575 cord_individual_obj[indivial_i,:] = [ 15. 8. 170. 178.]
576 cord_individual_obj[indivial_i,:] = [ 16. 9. 102. 111.]
577 cord_individual_obj[indivial_i,:] = [ 17. 13. 160. 173.]
578 cord_individual_obj[indivial_i,:] = [ 18. 12. 108. 120.]
579 cord_individual_obj[indivial_i,:] = [ 19. 11. 120. 131.]
580 cord_individual_obj[indivial_i,:] = [ 20. 8. 103. 111.]
581 cord_individual_obj[indivial_i,:] = [ 21. 9. 85. 94.]
582 cord_individual_obj[indivial_i,:] = [ 22. 10. 60. 70.]
583 cord_individual_obj[indivial_i,:] = [ 23. 10. 163. 173.]

```

```

584     cord_individual_obj[indivial_i, :] = [ 24.  9. 153. 162.]
585
586     min(cord_individual_obj[:, 3]) = 63.0
587     historl_G_best_iter[iter, 3] = 63.0
588 Begin iteration:
589
590 iter = 18
591     cord_individual_obj[indivial_i, :] = [ 0.  9. 99. 108.]
592     cord_individual_obj[indivial_i, :] = [ 1.  8. 79. 87.]
593     cord_individual_obj[indivial_i, :] = [ 2.  8. 120. 128.]
594     cord_individual_obj[indivial_i, :] = [ 3.  10. 133. 143.]
595     cord_individual_obj[indivial_i, :] = [ 4.  10. 99. 109.]
596     cord_individual_obj[indivial_i, :] = [ 5.  9. 98. 107.]
597     cord_individual_obj[indivial_i, :] = [ 6.  11. 127. 138.]
598     cord_individual_obj[indivial_i, :] = [ 7.  9. 54. 63.]
599     cord_individual_obj[indivial_i, :] = [ 8.  9. 124. 133.]
600     cord_individual_obj[indivial_i, :] = [ 9.  10. 109. 119.]
601     cord_individual_obj[indivial_i, :] = [ 10. 11. 117. 128.]
602     cord_individual_obj[indivial_i, :] = [ 11. 12. 103. 115.]
603     cord_individual_obj[indivial_i, :] = [ 12. 10. 96. 106.]
604     cord_individual_obj[indivial_i, :] = [ 13. 11. 94. 105.]
605     cord_individual_obj[indivial_i, :] = [ 14. 8. 122. 130.]
606     cord_individual_obj[indivial_i, :] = [ 15. 9. 54. 63.]
607     cord_individual_obj[indivial_i, :] = [ 16. 8. 125. 133.]
608     cord_individual_obj[indivial_i, :] = [ 17. 9. 132. 141.]
609     cord_individual_obj[indivial_i, :] = [ 18. 11. 103. 114.]
610     cord_individual_obj[indivial_i, :] = [ 19. 9. 146. 155.]
611     cord_individual_obj[indivial_i, :] = [ 20. 10. 95. 105.]
612     cord_individual_obj[indivial_i, :] = [ 21. 10. 96. 106.]
613     cord_individual_obj[indivial_i, :] = [ 22. 10. 96. 106.]
614     cord_individual_obj[indivial_i, :] = [ 23. 8. 165. 173.]
615     cord_individual_obj[indivial_i, :] = [ 24. 9. 148. 157.]
616
617     min(cord_individual_obj[:, 3]) = 63.0
618     historl_G_best_iter[iter, 3] = 63.0
619 Begin iteration:
620
621 iter = 19
622     cord_individual_obj[indivial_i, :] = [ 0.  9. 166. 175.]
623     cord_individual_obj[indivial_i, :] = [ 1. 13. 88. 101.]
624     cord_individual_obj[indivial_i, :] = [ 2. 9. 155. 164.]
625     cord_individual_obj[indivial_i, :] = [ 3. 10. 123. 133.]
626     cord_individual_obj[indivial_i, :] = [ 4. 8. 161. 169.]
627     cord_individual_obj[indivial_i, :] = [ 5. 8. 117. 125.]
628     cord_individual_obj[indivial_i, :] = [ 6. 8. 159. 167.]
629     cord_individual_obj[indivial_i, :] = [ 7. 10. 144. 154.]
630     cord_individual_obj[indivial_i, :] = [ 8. 9. 106. 115.]
631     cord_individual_obj[indivial_i, :] = [ 9. 10. 99. 109.]
632     cord_individual_obj[indivial_i, :] = [ 10. 9. 151. 160.]
633     cord_individual_obj[indivial_i, :] = [ 11. 10. 67. 77.]
634     cord_individual_obj[indivial_i, :] = [ 12. 10. 198. 208.]
635     cord_individual_obj[indivial_i, :] = [ 13. 10. 122. 132.]
636     cord_individual_obj[indivial_i, :] = [ 14. 9. 116. 125.]
637     cord_individual_obj[indivial_i, :] = [ 15. 7. 142. 149.]
638     cord_individual_obj[indivial_i, :] = [ 16. 10. 123. 133.]
639     cord_individual_obj[indivial_i, :] = [ 17. 8. 135. 143.]
640     cord_individual_obj[indivial_i, :] = [ 18. 9. 155. 164.]
641     cord_individual_obj[indivial_i, :] = [ 19. 11. 136. 147.]
642     cord_individual_obj[indivial_i, :] = [ 20. 7. 177. 184.]
643     cord_individual_obj[indivial_i, :] = [ 21. 9. 167. 176.]
644     cord_individual_obj[indivial_i, :] = [ 22. 9. 94. 103.]
645     cord_individual_obj[indivial_i, :] = [ 23. 9. 54. 63.]
646     cord_individual_obj[indivial_i, :] = [ 24. 7. 223. 230.]
647
648     min(cord_individual_obj[:, 3]) = 63.0
649     historl_G_best_iter[iter, 3] = 63.0
650 Begin iteration:
651
652 iter = 20
653     cord_individual_obj[indivial_i, :] = [ 0. 11. 219. 230.]
654     cord_individual_obj[indivial_i, :] = [ 1. 10. 117. 127.]
655     cord_individual_obj[indivial_i, :] = [ 2. 9. 148. 157.]
656     cord_individual_obj[indivial_i, :] = [ 3. 10. 151. 161.]
657     cord_individual_obj[indivial_i, :] = [ 4. 8. 135. 143.]
658     cord_individual_obj[indivial_i, :] = [ 5. 9. 138. 147.]
659     cord_individual_obj[indivial_i, :] = [ 6. 9. 164. 173.]
660     cord_individual_obj[indivial_i, :] = [ 7. 10. 227. 237.]
661     cord_individual_obj[indivial_i, :] = [ 8. 9. 129. 138.]
662     cord_individual_obj[indivial_i, :] = [ 9. 10. 94. 104.]
663     cord_individual_obj[indivial_i, :] = [ 10. 9. 121. 130.]
664     cord_individual_obj[indivial_i, :] = [ 11. 9. 86. 95.]
665     cord_individual_obj[indivial_i, :] = [ 12. 9. 194. 203.]
666     cord_individual_obj[indivial_i, :] = [ 13. 10. 118. 128.]
667     cord_individual_obj[indivial_i, :] = [ 14. 9. 114. 123.]

```

```

668 cord_individual_obj[indivial_i,:] = [ 15. 9. 118. 127.]
669 cord_individual_obj[indivial_i,:] = [ 16. 10. 126. 136.]
670 cord_individual_obj[indivial_i,:] = [ 17. 11. 130. 141.]
671 cord_individual_obj[indivial_i,:] = [18. 11. 88. 99.]
672 cord_individual_obj[indivial_i,:] = [ 19. 10. 145. 155.]
673 cord_individual_obj[indivial_i,:] = [ 20. 9. 202. 211.]
674 cord_individual_obj[indivial_i,:] = [21. 11. 72. 83.]
675 cord_individual_obj[indivial_i,:] = [ 22. 9. 123. 132.]
676 cord_individual_obj[indivial_i,:] = [ 23. 9. 138. 147.]
677 cord_individual_obj[indivial_i,:] = [24. 9. 54. 63.]
678
679 min(cord_individual_obj[:, 3]) = 63.0
680 historl_G['best_iter', 3] = 63.0
681 Iteration calculate over
682
683
684
685
686 All item are in Bin and:
687 Bin area = 1080
688 Real_area = 229.0
689 Proportion_of_area = 0.21203703703703702
690 BEST_CHROM =
691 berth: [23.5 14.5 3.5 2.5 13.5 10.5 9.5 15.5 22.5 18.5 16.5 3.5 23. 8.
692 9. 4. ]
693 time: [4. 5. 1. 7. 7. 3. 4. 0. 0. 8. 3. 0. 1. 7. 0. 4.]
694 num_QC: [2. 4. 3. 3. 3. 4. 3. 4. 4. 4. 4. 2. 4. 3. 3.]
695 Objective function values and some other indicators:
696 Obj0 = 9.00          Obj1 = 54.00          Obj0 + Obj1 = 63.00
697 Total movement of crane: 0.00
698 Total waiting time in berth position: 54.00
699 Total index of q during berthing: 933.00
700 Specific arrangement for each vessel:
701 V_id: 0      li: 9.0           xi: 23.5           bow of i: 19.0           tail of i: 28.0           gama_i0: 4.0           gama_i1: 7
702 .0          gama_i1 + 1: 8.0   gama_i1 - gama_i0: 3.0           duration_time_i: 4.0           demand_i: 160.0         work
703 load_i: 160.0           work load gap_i: 0
704 V_id: 1      li: 7.0           xi: 14.5           bow of i: 11.0           tail of i: 18.0           gama_i0: 5.0           gama_i1: 6
705 .0          gama_i1 + 1: 7.0   gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 120.0         work
706 load_i: 120.0           work load gap_i: 0
707 V_id: 2      li: 7.0           xi: 3.5            bow of i: 0.0           tail of i: 7.0           gama_i0: 1.0           gama_i1: 3.0
708 140.0        gama_i1 + 1: 4.0   gama_i1 - gama_i0: 2.0           duration_time_i: 3.0           demand_i: 140.0         work load_i:
709 V_id: 3      li: 5.0            xi: 2.5            bow of i: 0.0           tail of i: 5.0           gama_i0: 7.0           gama_i1: 8.0
710 80.0          gama_i1 + 1: 9.0   gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 80.0          work load_i:
711 V_id: 4      li: 5.0            xi: 13.5           bow of i: 11.0           tail of i: 16.0           gama_i0: 7.0           gama_i1: 8
712 .0          gama_i1 + 1: 9.0   gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 80.0          work
713 load_i: 80.0           work load gap_i: 0
714 V_id: 5      li: 7.0            xi: 10.5           bow of i: 7.0           tail of i: 14.0           gama_i0: 3.0           gama_i1: 3
715 .0          gama_i1 + 1: 4.0   gama_i1 - gama_i0: 0.0           duration_time_i: 1.0           demand_i: 80.0          work
716 load_i: 80.0           work load gap_i: 0
717 V_id: 6      li: 3.0            xi: 9.5            bow of i: 8.0           tail of i: 11.0           gama_i0: 4.0           gama_i1: 5.0
718 100.0        gama_i1 + 1: 6.0   gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 100.0         work load_i:
719 V_id: 7      li: 9.0            xi: 15.5           bow of i: 11.0           tail of i: 20.0           gama_i0: 0.0           gama_i1: 2
720 .0          gama_i1 + 1: 3.0   gama_i1 - gama_i0: 2.0           duration_time_i: 3.0           demand_i: 140.0         work
721 load_i: 140.0           work load gap_i: 0
722 V_id: 8      li: 5.0            xi: 22.5           bow of i: 20.0           tail of i: 25.0           gama_i0: 0.0           gama_i1: 0
723 .0          gama_i1 + 1: 1.0   gama_i1 - gama_i0: 0.0           duration_time_i: 1.0           demand_i: 60.0          work
724 load_i: 60.0           work load gap_i: 0
725 V_id: 9      li: 5.0            xi: 18.5           bow of i: 16.0           tail of i: 21.0           gama_i0: 8.0           gama_i1: 9
726 .0          gama_i1 + 1: 10.0  gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 160.0         work
727 load_i: 160.0           work load gap_i: 0
728 V_id: 10     li: 5.0            xi: 16.5           bow of i: 14.0           tail of i: 19.0           gama_i0: 3.0           gama_i1:
729 : 4.0        gama_i1 + 1: 5.0   gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 100.0         work
730 load_i: 100.0           work load gap_i: 0
731 V_id: 11     li: 7.0            xi: 3.5            bow of i: 0.0           tail of i: 7.0           gama_i0: 0.0           gama_i1: 0.0
732 80.0          gama_i1 + 1: 1.0   gama_i1 - gama_i0: 0.0           duration_time_i: 1.0           demand_i: 80.0          work load_i:
733 V_id: 12     li: 6.0            xi: 23.0           bow of i: 20.0           tail of i: 26.0           gama_i0: 1.0           gama_i1:
734 : 3.0        gama_i1 + 1: 4.0   gama_i1 - gama_i0: 2.0           duration_time_i: 3.0           demand_i: 100.0         work
735 load_i: 100.0           work load gap_i: 0
736 V_id: 13     li: 6.0            xi: 8.0            bow of i: 5.0           tail of i: 11.0           gama_i0: 7.0           gama_i1: 8
737 .0          gama_i1 + 1: 9.0   gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 100.0         work
738 load_i: 100.0           work load gap_i: 0
739 V_id: 14     li: 4.0            xi: 9.0            bow of i: 7.0           tail of i: 11.0           gama_i0: 0.0           gama_i1: 2
740 .0          gama_i1 + 1: 3.0   gama_i1 - gama_i0: 2.0           duration_time_i: 3.0           demand_i: 160.0         work
741 load_i: 160.0           work load gap_i: 0
742 V_id: 15     li: 8.0            xi: 4.0            bow of i: 0.0           tail of i: 8.0           gama_i0: 4.0           gama_i1: 6.0
743 140.0        gama_i1 + 1: 7.0   gama_i1 - gama_i0: 2.0           duration_time_i: 3.0           demand_i: 140.0         work load_i:
744
745 Algorithm finished and the total CPU time: 490 s
746 End

```