

unknown

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80 cord_individual_obj[indivial_i,:] = [16. 7. 92. 99.]
81 cord_individual_obj[indivial_i,:] = [17. 11. 169. 180.]
82 cord_individual_obj[indivial_i,:] = [18. 8. 103. 111.]
83 cord_individual_obj[indivial_i,:] = [19. 10. 143. 153.]
84 cord_individual_obj[indivial_i,:] = [20. 10. 62. 72.]
85 cord_individual_obj[indivial_i,:] = [21. 9. 120. 129.]
86 cord_individual_obj[indivial_i,:] = [22. 9. 98. 107.]
87 cord_individual_obj[indivial_i,:] = [23. 10. 99. 109.]
88 cord_individual_obj[indivial_i,:] = [24. 11. 115. 126.]
89
90 min(cord_individual_obj[:,3]) = 72.0
91 historl_G_best_iter[iter, 3] = 72.0
92 Begin iteration:
93
94 iter = 2
95 cord_individual_obj[indivial_i,:] = [0. 10. 79. 89.]
96 cord_individual_obj[indivial_i,:] = [1. 10. 148. 158.]
97 cord_individual_obj[indivial_i,:] = [2. 9. 119. 128.]
98 cord_individual_obj[indivial_i,:] = [3. 10. 112. 122.]
99 cord_individual_obj[indivial_i,:] = [4. 9. 137. 146.]
100 cord_individual_obj[indivial_i,:] = [5. 9. 121. 130.]
101 cord_individual_obj[indivial_i,:] = [6. 9. 172. 181.]
102 cord_individual_obj[indivial_i,:] = [7. 8. 161. 169.]
103 cord_individual_obj[indivial_i,:] = [8. 10. 179. 189.]
104 cord_individual_obj[indivial_i,:] = [9. 9. 167. 176.]
105 cord_individual_obj[indivial_i,:] = [10. 9. 99. 108.]
106 cord_individual_obj[indivial_i,:] = [11. 10. 62. 72.]
107 cord_individual_obj[indivial_i,:] = [12. 11. 168. 179.]
108 cord_individual_obj[indivial_i,:] = [13. 8. 109. 117.]
109 cord_individual_obj[indivial_i,:] = [14. 9. 151. 160.]
110 cord_individual_obj[indivial_i,:] = [15. 10. 121. 131.]
111 cord_individual_obj[indivial_i,:] = [16. 8. 130. 138.]
112 cord_individual_obj[indivial_i,:] = [17. 8. 200. 208.]
113 cord_individual_obj[indivial_i,:] = [18. 7. 96. 103.]
114 cord_individual_obj[indivial_i,:] = [19. 10. 134. 144.]
115 cord_individual_obj[indivial_i,:] = [20. 10. 107. 117.]
116 cord_individual_obj[indivial_i,:] = [21. 11. 162. 173.]
117 cord_individual_obj[indivial_i,:] = [22. 10. 83. 93.]
118 cord_individual_obj[indivial_i,:] = [23. 7. 130. 137.]
119 cord_individual_obj[indivial_i,:] = [24. 10. 116. 126.]
120
121 min(cord_individual_obj[:,3]) = 72.0
122 historl_G_best_iter[iter, 3] = 72.0
123 Begin iteration:
124
125 iter = 3
126 cord_individual_obj[indivial_i,:] = [0. 8. 106. 114.]
127 cord_individual_obj[indivial_i,:] = [1. 10. 138. 148.]
128 cord_individual_obj[indivial_i,:] = [2. 10. 117. 127.]
129 cord_individual_obj[indivial_i,:] = [3. 9. 113. 122.]
130 cord_individual_obj[indivial_i,:] = [4. 8. 92. 100.]
131 cord_individual_obj[indivial_i,:] = [5. 9. 131. 140.]
132 cord_individual_obj[indivial_i,:] = [6. 9. 92. 101.]
133 cord_individual_obj[indivial_i,:] = [7. 8. 129. 137.]
134 cord_individual_obj[indivial_i,:] = [8. 10. 114. 124.]
135 cord_individual_obj[indivial_i,:] = [9. 10. 82. 92.]
136 cord_individual_obj[indivial_i,:] = [10. 8. 59. 67.]
137 cord_individual_obj[indivial_i,:] = [11. 9. 101. 110.]
138 cord_individual_obj[indivial_i,:] = [12. 10. 125. 135.]
139 cord_individual_obj[indivial_i,:] = [13. 10. 140. 150.]
140 cord_individual_obj[indivial_i,:] = [14. 10. 80. 90.]
141 cord_individual_obj[indivial_i,:] = [15. 10. 131. 141.]
142 cord_individual_obj[indivial_i,:] = [16. 9. 132. 141.]
143 cord_individual_obj[indivial_i,:] = [17. 10. 62. 72.]
144 cord_individual_obj[indivial_i,:] = [18. 8. 224. 232.]
145 cord_individual_obj[indivial_i,:] = [19. 9. 134. 143.]
146 cord_individual_obj[indivial_i,:] = [20. 7. 98. 105.]
147 cord_individual_obj[indivial_i,:] = [21. 8. 175. 183.]
148 cord_individual_obj[indivial_i,:] = [22. 8. 112. 120.]
149 cord_individual_obj[indivial_i,:] = [23. 9. 92. 101.]
150 cord_individual_obj[indivial_i,:] = [24. 10. 106. 116.]
151
152 min(cord_individual_obj[:,3]) = 67.0
153 historl_G_best_iter[iter, 3] = 67.0
154 Begin iteration:
155
156 iter = 4
157 cord_individual_obj[indivial_i,:] = [0. 9. 174. 183.]
158 cord_individual_obj[indivial_i,:] = [1. 10. 169. 179.]
159 cord_individual_obj[indivial_i,:] = [2. 9. 182. 191.]
160 cord_individual_obj[indivial_i,:] = [3. 10. 109. 119.]
161 cord_individual_obj[indivial_i,:] = [4. 12. 116. 128.]
162 cord_individual_obj[indivial_i,:] = [5. 8. 131. 139.]
163 cord_individual_obj[indivial_i,:] = [6. 9. 111. 120.]

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164 cord_individual_obj[indivial_i,:] = [ 7. 10. 107. 117.]
165 cord_individual_obj[indivial_i,:] = [ 8. 7. 187. 194.]
166 cord_individual_obj[indivial_i,:] = [ 9. 10. 182. 192.]
167 cord_individual_obj[indivial_i,:] = [ 10. 9. 125. 134.]
168 cord_individual_obj[indivial_i,:] = [ 11. 8. 107. 115.]
169 cord_individual_obj[indivial_i,:] = [ 12. 8. 137. 145.]
170 cord_individual_obj[indivial_i,:] = [ 13. 10. 160. 170.]
171 cord_individual_obj[indivial_i,:] = [ 14. 8. 119. 127.]
172 cord_individual_obj[indivial_i,:] = [ 15. 10. 113. 123.]
173 cord_individual_obj[indivial_i,:] = [ 16. 8. 131. 139.]
174 cord_individual_obj[indivial_i,:] = [ 17. 10. 111. 121.]
175 cord_individual_obj[indivial_i,:] = [ 18. 8. 59. 67.]
176 cord_individual_obj[indivial_i,:] = [ 19. 9. 134. 143.]
177 cord_individual_obj[indivial_i,:] = [ 20. 9. 180. 189.]
178 cord_individual_obj[indivial_i,:] = [ 21. 9. 130. 139.]
179 cord_individual_obj[indivial_i,:] = [ 22. 9. 191. 200.]
180 cord_individual_obj[indivial_i,:] = [ 23. 11. 180. 191.]
181 cord_individual_obj[indivial_i,:] = [ 24. 8. 117. 125.]
182
183 min(cord_individual_obj[:,3]) = 67.0
184 historl_G_best_iter[iter,3] = 67.0
185 Begin iteration:
186
187 iter = 5
188 cord_individual_obj[indivial_i,:] = [ 0. 9. 147. 156.]
189 cord_individual_obj[indivial_i,:] = [ 1. 10. 164. 174.]
190 cord_individual_obj[indivial_i,:] = [ 2. 8. 146. 154.]
191 cord_individual_obj[indivial_i,:] = [ 3. 9. 118. 127.]
192 cord_individual_obj[indivial_i,:] = [ 4. 10. 102. 112.]
193 cord_individual_obj[indivial_i,:] = [ 5. 8. 154. 162.]
194 cord_individual_obj[indivial_i,:] = [ 6. 8. 150. 158.]
195 cord_individual_obj[indivial_i,:] = [ 7. 10. 145. 155.]
196 cord_individual_obj[indivial_i,:] = [ 8. 10. 143. 153.]
197 cord_individual_obj[indivial_i,:] = [ 9. 11. 171. 182.]
198 cord_individual_obj[indivial_i,:] = [ 10. 11. 94. 105.]
199 cord_individual_obj[indivial_i,:] = [ 11. 10. 103. 113.]
200 cord_individual_obj[indivial_i,:] = [ 12. 9. 96. 105.]
201 cord_individual_obj[indivial_i,:] = [ 13. 8. 107. 115.]
202 cord_individual_obj[indivial_i,:] = [ 14. 9. 113. 122.]
203 cord_individual_obj[indivial_i,:] = [ 15. 8. 88. 96.]
204 cord_individual_obj[indivial_i,:] = [ 16. 10. 95. 105.]
205 cord_individual_obj[indivial_i,:] = [ 17. 9. 108. 117.]
206 cord_individual_obj[indivial_i,:] = [ 18. 8. 77. 85.]
207 cord_individual_obj[indivial_i,:] = [ 19. 8. 181. 189.]
208 cord_individual_obj[indivial_i,:] = [ 20. 10. 159. 169.]
209 cord_individual_obj[indivial_i,:] = [ 21. 8. 101. 109.]
210 cord_individual_obj[indivial_i,:] = [ 22. 8. 59. 67.]
211 cord_individual_obj[indivial_i,:] = [ 23. 11. 115. 126.]
212 cord_individual_obj[indivial_i,:] = [ 24. 9. 137. 146.]
213
214 min(cord_individual_obj[:,3]) = 67.0
215 historl_G_best_iter[iter,3] = 67.0
216 Begin iteration:
217
218 iter = 6
219 cord_individual_obj[indivial_i,:] = [ 0. 8. 114. 122.]
220 cord_individual_obj[indivial_i,:] = [ 1. 11. 132. 143.]
221 cord_individual_obj[indivial_i,:] = [ 2. 10. 143. 153.]
222 cord_individual_obj[indivial_i,:] = [ 3. 10. 90. 100.]
223 cord_individual_obj[indivial_i,:] = [ 4. 9. 172. 181.]
224 cord_individual_obj[indivial_i,:] = [ 5. 7. 104. 111.]
225 cord_individual_obj[indivial_i,:] = [ 6. 9. 113. 122.]
226 cord_individual_obj[indivial_i,:] = [ 7. 9. 229. 238.]
227 cord_individual_obj[indivial_i,:] = [ 8. 9. 148. 157.]
228 cord_individual_obj[indivial_i,:] = [ 9. 12. 164. 176.]
229 cord_individual_obj[indivial_i,:] = [ 10. 10. 138. 148.]
230 cord_individual_obj[indivial_i,:] = [ 11. 7. 77. 84.]
231 cord_individual_obj[indivial_i,:] = [ 12. 8. 136. 144.]
232 cord_individual_obj[indivial_i,:] = [ 13. 11. 169. 180.]
233 cord_individual_obj[indivial_i,:] = [ 14. 8. 107. 115.]
234 cord_individual_obj[indivial_i,:] = [ 15. 8. 87. 95.]
235 cord_individual_obj[indivial_i,:] = [ 16. 10. 133. 143.]
236 cord_individual_obj[indivial_i,:] = [ 17. 9. 63. 72.]
237 cord_individual_obj[indivial_i,:] = [ 18. 11. 129. 140.]
238 cord_individual_obj[indivial_i,:] = [ 19. 8. 59. 67.]
239 cord_individual_obj[indivial_i,:] = [ 20. 9. 132. 141.]
240 cord_individual_obj[indivial_i,:] = [ 21. 10. 101. 111.]
241 cord_individual_obj[indivial_i,:] = [ 22. 10. 112. 122.]
242 cord_individual_obj[indivial_i,:] = [ 23. 11. 129. 140.]
243 cord_individual_obj[indivial_i,:] = [ 24. 10. 122. 132.]
244
245 min(cord_individual_obj[:,3]) = 67.0
246 historl_G_best_iter[iter,3] = 67.0
247 Begin iteration:

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248
249 iter = 7
250 cord_individual_obj[indivial_i, :] = [ 0. 8. 137. 145.]
251 cord_individual_obj[indivial_i, :] = [ 1. 8. 102. 110.]
252 cord_individual_obj[indivial_i, :] = [ 2. 8. 149. 157.]
253 cord_individual_obj[indivial_i, :] = [ 3. 10. 122. 132.]
254 cord_individual_obj[indivial_i, :] = [ 4. 12. 137. 149.]
255 cord_individual_obj[indivial_i, :] = [ 5. 8. 117. 125.]
256 cord_individual_obj[indivial_i, :] = [ 6. 9. 182. 191.]
257 cord_individual_obj[indivial_i, :] = [ 7. 8. 59. 67.]
258 cord_individual_obj[indivial_i, :] = [ 8. 10. 123. 133.]
259 cord_individual_obj[indivial_i, :] = [ 9. 10. 124. 134.]
260 cord_individual_obj[indivial_i, :] = [ 10. 9. 186. 195.]
261 cord_individual_obj[indivial_i, :] = [ 11. 9. 116. 125.]
262 cord_individual_obj[indivial_i, :] = [ 12. 9. 186. 195.]
263 cord_individual_obj[indivial_i, :] = [ 13. 9. 143. 152.]
264 cord_individual_obj[indivial_i, :] = [ 14. 10. 97. 107.]
265 cord_individual_obj[indivial_i, :] = [ 15. 9. 102. 111.]
266 cord_individual_obj[indivial_i, :] = [ 16. 9. 164. 173.]
267 cord_individual_obj[indivial_i, :] = [ 17. 10. 132. 142.]
268 cord_individual_obj[indivial_i, :] = [ 18. 11. 123. 134.]
269 cord_individual_obj[indivial_i, :] = [ 19. 10. 155. 165.]
270 cord_individual_obj[indivial_i, :] = [ 20. 11. 136. 147.]
271 cord_individual_obj[indivial_i, :] = [ 21. 9. 188. 197.]
272 cord_individual_obj[indivial_i, :] = [ 22. 12. 133. 145.]
273 cord_individual_obj[indivial_i, :] = [ 23. 8. 131. 139.]
274 cord_individual_obj[indivial_i, :] = [ 24. 8. 166. 174.]
275

276 min(cord_individual_obj[:, 3]) = 67.0
277 historl_G_best_iter[iter, 3] = 67.0
278 Begin iteration:
279
280 iter = 8
281 cord_individual_obj[indivial_i, :] = [ 0. 9. 163. 172.]
282 cord_individual_obj[indivial_i, :] = [ 1. 9. 130. 139.]
283 cord_individual_obj[indivial_i, :] = [ 2. 8. 84. 92.]
284 cord_individual_obj[indivial_i, :] = [ 3. 11. 103. 114.]
285 cord_individual_obj[indivial_i, :] = [ 4. 11. 105. 116.]
286 cord_individual_obj[indivial_i, :] = [ 5. 9. 124. 133.]
287 cord_individual_obj[indivial_i, :] = [ 6. 8. 162. 170.]
288 cord_individual_obj[indivial_i, :] = [ 7. 9. 124. 133.]
289 cord_individual_obj[indivial_i, :] = [ 8. 8. 84. 92.]
290 cord_individual_obj[indivial_i, :] = [ 9. 9. 151. 160.]
291 cord_individual_obj[indivial_i, :] = [ 10. 9. 92. 101.]
292 cord_individual_obj[indivial_i, :] = [ 11. 8. 104. 112.]
293 cord_individual_obj[indivial_i, :] = [ 12. 9. 187. 196.]
294 cord_individual_obj[indivial_i, :] = [ 13. 10. 131. 141.]
295 cord_individual_obj[indivial_i, :] = [ 14. 8. 122. 130.]
296 cord_individual_obj[indivial_i, :] = [ 15. 9. 120. 129.]
297 cord_individual_obj[indivial_i, :] = [ 16. 8. 87. 95.]
298 cord_individual_obj[indivial_i, :] = [ 17. 10. 107. 117.]
299 cord_individual_obj[indivial_i, :] = [ 18. 9. 109. 118.]
300 cord_individual_obj[indivial_i, :] = [ 19. 11. 181. 192.]
301 cord_individual_obj[indivial_i, :] = [ 20. 11. 116. 127.]
302 cord_individual_obj[indivial_i, :] = [ 21. 8. 59. 67.]
303 cord_individual_obj[indivial_i, :] = [ 22. 9. 72. 81.]
304 cord_individual_obj[indivial_i, :] = [ 23. 11. 86. 97.]
305 cord_individual_obj[indivial_i, :] = [ 24. 10. 107. 117.]
306

307 min(cord_individual_obj[:, 3]) = 67.0
308 historl_G_best_iter[iter, 3] = 67.0
309 Begin iteration:
310
311 iter = 9
312 cord_individual_obj[indivial_i, :] = [ 0. 10. 115. 125.]
313 cord_individual_obj[indivial_i, :] = [ 1. 10. 111. 121.]
314 cord_individual_obj[indivial_i, :] = [ 2. 10. 98. 108.]
315 cord_individual_obj[indivial_i, :] = [ 3. 11. 103. 114.]
316 cord_individual_obj[indivial_i, :] = [ 4. 9. 127. 136.]
317 cord_individual_obj[indivial_i, :] = [ 5. 8. 217. 225.]
318 cord_individual_obj[indivial_i, :] = [ 6. 9. 165. 174.]
319 cord_individual_obj[indivial_i, :] = [ 7. 8. 110. 118.]
320 cord_individual_obj[indivial_i, :] = [ 8. 10. 142. 152.]
321 cord_individual_obj[indivial_i, :] = [ 9. 9. 104. 113.]
322 cord_individual_obj[indivial_i, :] = [ 10. 10. 108. 118.]
323 cord_individual_obj[indivial_i, :] = [ 11. 9. 99. 108.]
324 cord_individual_obj[indivial_i, :] = [ 12. 8. 59. 67.]
325 cord_individual_obj[indivial_i, :] = [ 13. 10. 84. 94.]
326 cord_individual_obj[indivial_i, :] = [ 14. 9. 136. 145.]
327 cord_individual_obj[indivial_i, :] = [ 15. 8. 82. 90.]
328 cord_individual_obj[indivial_i, :] = [ 16. 10. 97. 107.]
329 cord_individual_obj[indivial_i, :] = [ 17. 9. 93. 102.]
330 cord_individual_obj[indivial_i, :] = [ 18. 9. 112. 121.]
331 cord_individual_obj[indivial_i, :] = [ 19. 11. 131. 142.]

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unknown

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332     cord_individual_obj[indivial_i, :] = [ 20. 11. 108. 119.]  
333     cord_individual_obj[indivial_i, :] = [ 21. 8. 130. 138.]  
334     cord_individual_obj[indivial_i, :] = [ 22. 12. 160. 172.]  
335     cord_individual_obj[indivial_i, :] = [ 23. 10. 161. 171.]  
336     cord_individual_obj[indivial_i, :] = [ 24. 9. 150. 159.]  
337  
338 min(cord_individual_obj[:, 3]) = 67.0  
339 histol_G_best_iter[iter, 3] = 67.0  
340 Begin iteration:  
341  
342 iter = 10  
343     cord_individual_obj[indivial_i, :] = [ 0. 9. 98. 107.]  
344     cord_individual_obj[indivial_i, :] = [ 1. 10. 105. 115.]  
345     cord_individual_obj[indivial_i, :] = [ 2. 8. 96. 104.]  
346     cord_individual_obj[indivial_i, :] = [ 3. 12. 110. 122.]  
347     cord_individual_obj[indivial_i, :] = [ 4. 9. 168. 177.]  
348     cord_individual_obj[indivial_i, :] = [ 5. 8. 59. 67.]  
349     cord_individual_obj[indivial_i, :] = [ 6. 11. 206. 217.]  
350     cord_individual_obj[indivial_i, :] = [ 7. 10. 136. 146.]  
351     cord_individual_obj[indivial_i, :] = [ 8. 10. 125. 135.]  
352     cord_individual_obj[indivial_i, :] = [ 9. 10. 58. 68.]  
353     cord_individual_obj[indivial_i, :] = [ 10. 10. 141. 151.]  
354     cord_individual_obj[indivial_i, :] = [ 11. 9. 162. 171.]  
355     cord_individual_obj[indivial_i, :] = [ 12. 8. 121. 129.]  
356     cord_individual_obj[indivial_i, :] = [ 13. 11. 117. 128.]  
357     cord_individual_obj[indivial_i, :] = [ 14. 9. 164. 173.]  
358     cord_individual_obj[indivial_i, :] = [ 15. 11. 148. 159.]  
359     cord_individual_obj[indivial_i, :] = [ 16. 11. 113. 124.]  
360     cord_individual_obj[indivial_i, :] = [ 17. 8. 83. 91.]  
361     cord_individual_obj[indivial_i, :] = [ 18. 11. 98. 109.]  
362     cord_individual_obj[indivial_i, :] = [ 19. 11. 187. 198.]  
363     cord_individual_obj[indivial_i, :] = [ 20. 10. 125. 135.]  
364     cord_individual_obj[indivial_i, :] = [ 21. 9. 149. 158.]  
365     cord_individual_obj[indivial_i, :] = [ 22. 12. 84. 96.]  
366     cord_individual_obj[indivial_i, :] = [ 23. 10. 122. 132.]  
367     cord_individual_obj[indivial_i, :] = [ 24. 10. 117. 127.]  
368  
369 min(cord_individual_obj[:, 3]) = 67.0  
370 histol_G_best_iter[iter, 3] = 67.0  
371 Begin iteration:  
372  
373 iter = 11  
374     cord_individual_obj[indivial_i, :] = [ 0. 12. 146. 158.]  
375     cord_individual_obj[indivial_i, :] = [ 1. 10. 120. 130.]  
376     cord_individual_obj[indivial_i, :] = [ 2. 11. 75. 86.]  
377     cord_individual_obj[indivial_i, :] = [ 3. 10. 162. 172.]  
378     cord_individual_obj[indivial_i, :] = [ 4. 10. 177. 187.]  
379     cord_individual_obj[indivial_i, :] = [ 5. 8. 111. 119.]  
380     cord_individual_obj[indivial_i, :] = [ 6. 8. 59. 67.]  
381     cord_individual_obj[indivial_i, :] = [ 7. 11. 95. 106.]  
382     cord_individual_obj[indivial_i, :] = [ 8. 12. 131. 143.]  
383     cord_individual_obj[indivial_i, :] = [ 9. 8. 109. 117.]  
384     cord_individual_obj[indivial_i, :] = [ 10. 11. 77. 88.]  
385     cord_individual_obj[indivial_i, :] = [ 11. 8. 173. 181.]  
386     cord_individual_obj[indivial_i, :] = [ 12. 8. 144. 152.]  
387     cord_individual_obj[indivial_i, :] = [ 13. 10. 93. 103.]  
388     cord_individual_obj[indivial_i, :] = [ 14. 9. 115. 124.]  
389     cord_individual_obj[indivial_i, :] = [ 15. 9. 149. 158.]  
390     cord_individual_obj[indivial_i, :] = [ 16. 11. 80. 91.]  
391     cord_individual_obj[indivial_i, :] = [ 17. 10. 122. 132.]  
392     cord_individual_obj[indivial_i, :] = [ 18. 11. 139. 150.]  
393     cord_individual_obj[indivial_i, :] = [ 19. 10. 107. 117.]  
394     cord_individual_obj[indivial_i, :] = [ 20. 10. 115. 125.]  
395     cord_individual_obj[indivial_i, :] = [ 21. 9. 119. 128.]  
396     cord_individual_obj[indivial_i, :] = [ 22. 8. 165. 173.]  
397     cord_individual_obj[indivial_i, :] = [ 23. 9. 80. 89.]  
398     cord_individual_obj[indivial_i, :] = [ 24. 8. 132. 140.]  
399  
400 min(cord_individual_obj[:, 3]) = 67.0  
401 histol_G_best_iter[iter, 3] = 67.0  
402 Begin iteration:  
403  
404 iter = 12  
405     cord_individual_obj[indivial_i, :] = [ 0. 11. 124. 135.]  
406     cord_individual_obj[indivial_i, :] = [ 1. 10. 98. 108.]  
407     cord_individual_obj[indivial_i, :] = [ 2. 9. 111. 120.]  
408     cord_individual_obj[indivial_i, :] = [ 3. 10. 86. 96.]  
409     cord_individual_obj[indivial_i, :] = [ 4. 8. 59. 67.]  
410     cord_individual_obj[indivial_i, :] = [ 5. 9. 149. 158.]  
411     cord_individual_obj[indivial_i, :] = [ 6. 9. 124. 133.]  
412     cord_individual_obj[indivial_i, :] = [ 7. 10. 98. 108.]  
413     cord_individual_obj[indivial_i, :] = [ 8. 8. 125. 133.]  
414     cord_individual_obj[indivial_i, :] = [ 9. 11. 81. 92.]  
415     cord_individual_obj[indivial_i, :] = [ 10. 10. 54. 64.]
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416 cord_individual_obj[indivial_i,:] = [ 11. 10. 117. 127.]
417 cord_individual_obj[indivial_i,:] = [ 12. 8. 115. 123.]
418 cord_individual_obj[indivial_i,:] = [ 13. 11. 125. 136.]
419 cord_individual_obj[indivial_i,:] = [ 14. 9. 162. 171.]
420 cord_individual_obj[indivial_i,:] = [ 15. 10. 111. 121.]
421 cord_individual_obj[indivial_i,:] = [ 16. 12. 129. 141.]
422 cord_individual_obj[indivial_i,:] = [ 17. 9. 112. 121.]
423 cord_individual_obj[indivial_i,:] = [ 18. 11. 152. 163.]
424 cord_individual_obj[indivial_i,:] = [ 19. 11. 108. 119.]
425 cord_individual_obj[indivial_i,:] = [ 20. 12. 122. 134.]
426 cord_individual_obj[indivial_i,:] = [ 21. 13. 108. 121.]
427 cord_individual_obj[indivial_i,:] = [ 22. 11. 188. 199.]
428 cord_individual_obj[indivial_i,:] = [ 23. 11. 218. 229.]
429 cord_individual_obj[indivial_i,:] = [ 24. 9. 69. 78.]
430
431 min(cord_individual_obj[:,3]) = 64.0
432 histol_G_best_iter[iter,3] = 64.0
433 Begin iteration:
434
435 iter = 13
436 cord_individual_obj[indivial_i,:] = [ 0. 9. 103. 112.]
437 cord_individual_obj[indivial_i,:] = [ 1. 9. 152. 161.]
438 cord_individual_obj[indivial_i,:] = [ 2. 9. 102. 111.]
439 cord_individual_obj[indivial_i,:] = [ 3. 8. 106. 114.]
440 cord_individual_obj[indivial_i,:] = [ 4. 9. 107. 116.]
441 cord_individual_obj[indivial_i,:] = [ 5. 7. 176. 183.]
442 cord_individual_obj[indivial_i,:] = [ 6. 9. 194. 203.]
443 cord_individual_obj[indivial_i,:] = [ 7. 11. 143. 154.]
444 cord_individual_obj[indivial_i,:] = [ 8. 11. 104. 115.]
445 cord_individual_obj[indivial_i,:] = [ 9. 10. 161. 171.]
446 cord_individual_obj[indivial_i,:] = [ 10. 11. 110. 121.]
447 cord_individual_obj[indivial_i,:] = [ 11. 10. 187. 197.]
448 cord_individual_obj[indivial_i,:] = [ 12. 7. 150. 157.]
449 cord_individual_obj[indivial_i,:] = [ 13. 9. 103. 112.]
450 cord_individual_obj[indivial_i,:] = [ 14. 8. 134. 142.]
451 cord_individual_obj[indivial_i,:] = [ 15. 10. 143. 153.]
452 cord_individual_obj[indivial_i,:] = [ 16. 10. 164. 174.]
453 cord_individual_obj[indivial_i,:] = [ 17. 8. 191. 199.]
454 cord_individual_obj[indivial_i,:] = [ 18. 10. 119. 129.]
455 cord_individual_obj[indivial_i,:] = [ 19. 9. 118. 127.]
456 cord_individual_obj[indivial_i,:] = [ 20. 9. 162. 171.]
457 cord_individual_obj[indivial_i,:] = [ 21. 11. 166. 177.]
458 cord_individual_obj[indivial_i,:] = [ 22. 9. 130. 139.]
459 cord_individual_obj[indivial_i,:] = [ 23. 10. 54. 64.]
460 cord_individual_obj[indivial_i,:] = [ 24. 10. 115. 125.]
461
462 min(cord_individual_obj[:,3]) = 64.0
463 histol_G_best_iter[iter,3] = 64.0
464 Begin iteration:
465
466 iter = 14
467 cord_individual_obj[indivial_i,:] = [ 0. 10. 128. 138.]
468 cord_individual_obj[indivial_i,:] = [ 1. 8. 129. 137.]
469 cord_individual_obj[indivial_i,:] = [ 2. 9. 133. 142.]
470 cord_individual_obj[indivial_i,:] = [ 3. 11. 99. 110.]
471 cord_individual_obj[indivial_i,:] = [ 4. 9. 107. 116.]
472 cord_individual_obj[indivial_i,:] = [ 5. 8. 125. 133.]
473 cord_individual_obj[indivial_i,:] = [ 6. 10. 54. 64.]
474 cord_individual_obj[indivial_i,:] = [ 7. 8. 173. 181.]
475 cord_individual_obj[indivial_i,:] = [ 8. 9. 185. 194.]
476 cord_individual_obj[indivial_i,:] = [ 9. 10. 186. 196.]
477 cord_individual_obj[indivial_i,:] = [ 10. 11. 131. 142.]
478 cord_individual_obj[indivial_i,:] = [ 11. 10. 191. 201.]
479 cord_individual_obj[indivial_i,:] = [ 12. 9. 80. 89.]
480 cord_individual_obj[indivial_i,:] = [ 13. 9. 166. 175.]
481 cord_individual_obj[indivial_i,:] = [ 14. 10. 117. 127.]
482 cord_individual_obj[indivial_i,:] = [ 15. 11. 136. 147.]
483 cord_individual_obj[indivial_i,:] = [ 16. 11. 90. 101.]
484 cord_individual_obj[indivial_i,:] = [ 17. 8. 144. 152.]
485 cord_individual_obj[indivial_i,:] = [ 18. 11. 129. 140.]
486 cord_individual_obj[indivial_i,:] = [ 19. 10. 119. 129.]
487 cord_individual_obj[indivial_i,:] = [ 20. 9. 174. 183.]
488 cord_individual_obj[indivial_i,:] = [ 21. 11. 164. 175.]
489 cord_individual_obj[indivial_i,:] = [ 22. 10. 122. 132.]
490 cord_individual_obj[indivial_i,:] = [ 23. 10. 122. 132.]
491 cord_individual_obj[indivial_i,:] = [ 24. 10. 75. 85.]
492
493 min(cord_individual_obj[:,3]) = 64.0
494 histol_G_best_iter[iter,3] = 64.0
495 Begin iteration:
496
497 iter = 15
498 cord_individual_obj[indivial_i,:] = [ 0. 11. 150. 161.]
499 cord_individual_obj[indivial_i,:] = [ 1. 9. 145. 154.]

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500 cord_individual_obj[indivial_i, :] = [ 2. 8. 100. 108.]
501 cord_individual_obj[indivial_i, :] = [ 3. 10. 80. 90.]
502 cord_individual_obj[indivial_i, :] = [ 4. 8. 150. 158.]
503 cord_individual_obj[indivial_i, :] = [ 5. 8. 164. 172.]
504 cord_individual_obj[indivial_i, :] = [ 6. 9. 201. 210.]
505 cord_individual_obj[indivial_i, :] = [ 7. 9. 150. 159.]
506 cord_individual_obj[indivial_i, :] = [ 8. 11. 160. 171.]
507 cord_individual_obj[indivial_i, :] = [ 9. 12. 99. 111.]
508 cord_individual_obj[indivial_i, :] = [ 10. 10. 169. 179.]
509 cord_individual_obj[indivial_i, :] = [ 11. 10. 54. 64.]
510 cord_individual_obj[indivial_i, :] = [ 12. 9. 119. 128.]
511 cord_individual_obj[indivial_i, :] = [ 13. 9. 195. 204.]
512 cord_individual_obj[indivial_i, :] = [ 14. 9. 147. 156.]
513 cord_individual_obj[indivial_i, :] = [ 15. 10. 100. 110.]
514 cord_individual_obj[indivial_i, :] = [ 16. 11. 145. 156.]
515 cord_individual_obj[indivial_i, :] = [ 17. 8. 153. 161.]
516 cord_individual_obj[indivial_i, :] = [ 18. 10. 121. 131.]
517 cord_individual_obj[indivial_i, :] = [ 19. 11. 144. 155.]
518 cord_individual_obj[indivial_i, :] = [ 20. 10. 160. 170.]
519 cord_individual_obj[indivial_i, :] = [ 21. 10. 85. 95.]
520 cord_individual_obj[indivial_i, :] = [ 22. 10. 126. 136.]
521 cord_individual_obj[indivial_i, :] = [ 23. 9. 100. 109.]
522 cord_individual_obj[indivial_i, :] = [ 24. 10. 85. 95.]
523
524 min(cord_individual_obj[:, 3]) = 64.0
525 histol_G_best_iter[iter, 3] = 64.0
526 Begin iteration:
527
528 iter = 16
529 cord_individual_obj[indivial_i, :] = [ 0. 10. 109. 119.]
530 cord_individual_obj[indivial_i, :] = [ 1. 8. 163. 171.]
531 cord_individual_obj[indivial_i, :] = [ 2. 9. 107. 116.]
532 cord_individual_obj[indivial_i, :] = [ 3. 8. 202. 210.]
533 cord_individual_obj[indivial_i, :] = [ 4. 9. 158. 167.]
534 cord_individual_obj[indivial_i, :] = [ 5. 10. 126. 136.]
535 cord_individual_obj[indivial_i, :] = [ 6. 10. 54. 64.]
536 cord_individual_obj[indivial_i, :] = [ 7. 10. 184. 194.]
537 cord_individual_obj[indivial_i, :] = [ 8. 8. 206. 214.]
538 cord_individual_obj[indivial_i, :] = [ 9. 12. 103. 115.]
539 cord_individual_obj[indivial_i, :] = [ 10. 11. 113. 124.]
540 cord_individual_obj[indivial_i, :] = [ 11. 10. 123. 133.]
541 cord_individual_obj[indivial_i, :] = [ 12. 8. 153. 161.]
542 cord_individual_obj[indivial_i, :] = [ 13. 10. 136. 146.]
543 cord_individual_obj[indivial_i, :] = [ 14. 8. 82. 90.]
544 cord_individual_obj[indivial_i, :] = [ 15. 11. 126. 137.]
545 cord_individual_obj[indivial_i, :] = [ 16. 10. 173. 183.]
546 cord_individual_obj[indivial_i, :] = [ 17. 9. 164. 173.]
547 cord_individual_obj[indivial_i, :] = [ 18. 9. 114. 123.]
548 cord_individual_obj[indivial_i, :] = [ 19. 10. 138. 148.]
549 cord_individual_obj[indivial_i, :] = [ 20. 10. 80. 90.]
550 cord_individual_obj[indivial_i, :] = [ 21. 11. 149. 160.]
551 cord_individual_obj[indivial_i, :] = [ 22. 11. 132. 143.]
552 cord_individual_obj[indivial_i, :] = [ 23. 10. 109. 119.]
553 cord_individual_obj[indivial_i, :] = [ 24. 11. 126. 137.]
554
555 min(cord_individual_obj[:, 3]) = 64.0
556 histol_G_best_iter[iter, 3] = 64.0
557 Begin iteration:
558
559 iter = 17
560 cord_individual_obj[indivial_i, :] = [ 0. 9. 184. 193.]
561 cord_individual_obj[indivial_i, :] = [ 1. 9. 108. 117.]
562 cord_individual_obj[indivial_i, :] = [ 2. 8. 110. 118.]
563 cord_individual_obj[indivial_i, :] = [ 3. 10. 167. 177.]
564 cord_individual_obj[indivial_i, :] = [ 4. 8. 141. 149.]
565 cord_individual_obj[indivial_i, :] = [ 5. 8. 145. 153.]
566 cord_individual_obj[indivial_i, :] = [ 6. 7. 142. 149.]
567 cord_individual_obj[indivial_i, :] = [ 7. 9. 126. 135.]
568 cord_individual_obj[indivial_i, :] = [ 8. 10. 54. 64.]
569 cord_individual_obj[indivial_i, :] = [ 9. 10. 98. 108.]
570 cord_individual_obj[indivial_i, :] = [ 10. 10. 153. 163.]
571 cord_individual_obj[indivial_i, :] = [ 11. 9. 136. 145.]
572 cord_individual_obj[indivial_i, :] = [ 12. 7. 118. 125.]
573 cord_individual_obj[indivial_i, :] = [ 13. 10. 120. 130.]
574 cord_individual_obj[indivial_i, :] = [ 14. 10. 111. 121.]
575 cord_individual_obj[indivial_i, :] = [ 15. 8. 141. 149.]
576 cord_individual_obj[indivial_i, :] = [ 16. 11. 126. 137.]
577 cord_individual_obj[indivial_i, :] = [ 17. 10. 136. 146.]
578 cord_individual_obj[indivial_i, :] = [ 18. 8. 131. 139.]
579 cord_individual_obj[indivial_i, :] = [ 19. 10. 92. 102.]
580 cord_individual_obj[indivial_i, :] = [ 20. 10. 173. 183.]
581 cord_individual_obj[indivial_i, :] = [ 21. 11. 141. 152.]
582 cord_individual_obj[indivial_i, :] = [ 22. 10. 112. 122.]
583 cord_individual_obj[indivial_i, :] = [ 23. 10. 99. 109.]

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584     cord_individual_obj[indivial_i, :] = [ 24. 10. 107. 117.]
585
586     min(cord_individual_obj[:, 3]) = 64.0
587     historl_G_best_iter[iter, 3] = 64.0
588 Begin iteration:
589
590 iter = 18
591     cord_individual_obj[indivial_i, :] = [ 0. 10. 54. 64.]
592     cord_individual_obj[indivial_i, :] = [ 1. 11. 147. 158.]
593     cord_individual_obj[indivial_i, :] = [ 2. 8. 77. 85.]
594     cord_individual_obj[indivial_i, :] = [ 3. 9. 92. 101.]
595     cord_individual_obj[indivial_i, :] = [ 4. 9. 197. 206.]
596     cord_individual_obj[indivial_i, :] = [ 5. 9. 113. 122.]
597     cord_individual_obj[indivial_i, :] = [ 6. 9. 149. 158.]
598     cord_individual_obj[indivial_i, :] = [ 7. 8. 127. 135.]
599     cord_individual_obj[indivial_i, :] = [ 8. 11. 199. 210.]
600     cord_individual_obj[indivial_i, :] = [ 9. 9. 125. 134.]
601     cord_individual_obj[indivial_i, :] = [ 10. 11. 106. 117.]
602     cord_individual_obj[indivial_i, :] = [ 11. 10. 112. 122.]
603     cord_individual_obj[indivial_i, :] = [ 12. 8. 92. 100.]
604     cord_individual_obj[indivial_i, :] = [ 13. 11. 172. 183.]
605     cord_individual_obj[indivial_i, :] = [ 14. 9. 87. 96.]
606     cord_individual_obj[indivial_i, :] = [ 15. 11. 152. 163.]
607     cord_individual_obj[indivial_i, :] = [ 16. 11. 67. 78.]
608     cord_individual_obj[indivial_i, :] = [ 17. 8. 113. 121.]
609     cord_individual_obj[indivial_i, :] = [ 18. 8. 136. 144.]
610     cord_individual_obj[indivial_i, :] = [ 19. 9. 211. 220.]
611     cord_individual_obj[indivial_i, :] = [ 20. 10. 118. 128.]
612     cord_individual_obj[indivial_i, :] = [ 21. 11. 91. 102.]
613     cord_individual_obj[indivial_i, :] = [ 22. 10. 128. 138.]
614     cord_individual_obj[indivial_i, :] = [ 23. 11. 165. 176.]
615     cord_individual_obj[indivial_i, :] = [ 24. 12. 125. 137.]
616
617     min(cord_individual_obj[:, 3]) = 64.0
618     historl_G_best_iter[iter, 3] = 64.0
619 Begin iteration:
620
621 iter = 19
622     cord_individual_obj[indivial_i, :] = [ 0. 9. 116. 125.]
623     cord_individual_obj[indivial_i, :] = [ 1. 10. 106. 116.]
624     cord_individual_obj[indivial_i, :] = [ 2. 9. 129. 138.]
625     cord_individual_obj[indivial_i, :] = [ 3. 9. 99. 108.]
626     cord_individual_obj[indivial_i, :] = [ 4. 9. 130. 139.]
627     cord_individual_obj[indivial_i, :] = [ 5. 8. 142. 150.]
628     cord_individual_obj[indivial_i, :] = [ 6. 10. 219. 229.]
629     cord_individual_obj[indivial_i, :] = [ 7. 10. 82. 92.]
630     cord_individual_obj[indivial_i, :] = [ 8. 9. 127. 136.]
631     cord_individual_obj[indivial_i, :] = [ 9. 11. 127. 138.]
632     cord_individual_obj[indivial_i, :] = [ 10. 11. 111. 122.]
633     cord_individual_obj[indivial_i, :] = [ 11. 8. 149. 157.]
634     cord_individual_obj[indivial_i, :] = [ 12. 9. 119. 128.]
635     cord_individual_obj[indivial_i, :] = [ 13. 8. 138. 146.]
636     cord_individual_obj[indivial_i, :] = [ 14. 10. 136. 146.]
637     cord_individual_obj[indivial_i, :] = [ 15. 10. 95. 105.]
638     cord_individual_obj[indivial_i, :] = [ 16. 8. 113. 121.]
639     cord_individual_obj[indivial_i, :] = [ 17. 9. 140. 149.]
640     cord_individual_obj[indivial_i, :] = [ 18. 8. 116. 124.]
641     cord_individual_obj[indivial_i, :] = [ 19. 10. 54. 64.]
642     cord_individual_obj[indivial_i, :] = [ 20. 9. 178. 187.]
643     cord_individual_obj[indivial_i, :] = [ 21. 10. 127. 137.]
644     cord_individual_obj[indivial_i, :] = [ 22. 11. 114. 125.]
645     cord_individual_obj[indivial_i, :] = [ 23. 8. 158. 166.]
646     cord_individual_obj[indivial_i, :] = [ 24. 9. 96. 105.]
647
648     min(cord_individual_obj[:, 3]) = 64.0
649     historl_G_best_iter[iter, 3] = 64.0
650 Begin iteration:
651
652 iter = 20
653     cord_individual_obj[indivial_i, :] = [ 0. 10. 121. 131.]
654     cord_individual_obj[indivial_i, :] = [ 1. 9. 141. 150.]
655     cord_individual_obj[indivial_i, :] = [ 2. 9. 91. 100.]
656     cord_individual_obj[indivial_i, :] = [ 3. 9. 109. 118.]
657     cord_individual_obj[indivial_i, :] = [ 4. 9. 157. 166.]
658     cord_individual_obj[indivial_i, :] = [ 5. 8. 165. 173.]
659     cord_individual_obj[indivial_i, :] = [ 6. 10. 54. 64.]
660     cord_individual_obj[indivial_i, :] = [ 7. 10. 120. 130.]
661     cord_individual_obj[indivial_i, :] = [ 8. 11. 183. 194.]
662     cord_individual_obj[indivial_i, :] = [ 9. 10. 161. 171.]
663     cord_individual_obj[indivial_i, :] = [ 10. 13. 116. 129.]
664     cord_individual_obj[indivial_i, :] = [ 11. 11. 124. 135.]
665     cord_individual_obj[indivial_i, :] = [ 12. 8. 139. 147.]
666     cord_individual_obj[indivial_i, :] = [ 13. 10. 103. 113.]
667     cord_individual_obj[indivial_i, :] = [ 14. 8. 125. 133.]

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668 cord_individual_obj[indivial_i,:] = [ 15. 9. 138. 147.]
669 cord_individual_obj[indivial_i,:] = [ 16. 9. 159. 168.]
670 cord_individual_obj[indivial_i,:] = [ 17. 9. 130. 139.]
671 cord_individual_obj[indivial_i,:] = [ 18. 10. 119. 129.]
672 cord_individual_obj[indivial_i,:] = [ 19. 10. 99. 109.]
673 cord_individual_obj[indivial_i,:] = [ 20. 10. 177. 187.]
674 cord_individual_obj[indivial_i,:] = [ 21. 11. 167. 178.]
675 cord_individual_obj[indivial_i,:] = [ 22. 10. 132. 142.]
676 cord_individual_obj[indivial_i,:] = [ 23. 10. 117. 127.]
677 cord_individual_obj[indivial_i,:] = [ 24. 10. 174. 184.]
678
679 min(cord_individual_obj[:, 3]) = 64.0
680 historl_G_best_iter[iter, 3] = 64.0
681 Iteration calculate over
682
683
684
685
686 All item are in Bin and:
687 Bin area = 1080
688 Real_area = 232.0
689 Proportion_of_area = 0.21481481481481482
690 BEST_CHROM =
691 berth: [24. 10.5 16. 4. 25. 4. 12. 20.5 17.5 25. 9.5 13. 20.5 4.
692 4. 11.5 17.5]
693 time: [5. 7. 7. 5. 2. 2. 0. 8. 3. 0. 3. 3. 0. 4. 0. 1. 0.]
694 num_QC: [3. 2. 2. 2. 4. 5. 2. 4. 2. 3. 2. 2. 8. 3. 2. 2.]
695 Objective function values and some other indicators:
696 Obj0 = 10.00      Obj1 = 54.00      Obj0 + Obj1 = 64.00
697 Total movement of crane: 4.00
698 Total waiting time in berth position: 50.00
699 Total index of q during berthing: 1118.00
700 Specific arrangement for each vessel:
701 V_id: 0          li: 8.0           xi: 24.0           bow of i: 20.0           tail of i: 28.0           gama_i0: 5.0           gama_i1: 7.0
702 .0              gama_i1 + 1: 8.0       gama_i1 - gama_i0: 2.0           duration_time_i: 3.0           demand_i: 160.0           work
703 load_i: 160.0   work load gap_i: 0
704 V_id: 1          li: 5.0           xi: 10.5           bow of i: 8.0           tail of i: 13.0           gama_i0: 7.0           gama_i1: 7.0
705 .0              gama_i1 + 1: 11.0      gama_i1 - gama_i0: 3.0           duration_time_i: 4.0           demand_i: 140.0           work
706 load_i: 140.0   work load gap_i: 0
707 V_id: 2          li: 6.0           xi: 16.0           bow of i: 13.0           tail of i: 19.0           gama_i0: 7.0           gama_i1: 9.0
708 .0              gama_i1 + 1: 10.0      gama_i1 - gama_i0: 2.0           duration_time_i: 3.0           demand_i: 120.0           work
709 load_i: 120.0   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: 5.0           gama_i1: 7.0
711 .0              gama_i1 + 1: 8.0       gama_i1 - gama_i0: 2.0           duration_time_i: 3.0           demand_i: 120.0           work load_i: 0
712 load_i: 120.0   work load gap_i: 0
713 V_id: 4          li: 6.0           xi: 25.0           bow of i: 22.0           tail of i: 28.0           gama_i0: 2.0           gama_i1: 4.0
714 .0              gama_i1 + 1: 5.0       gama_i1 - gama_i0: 2.0           duration_time_i: 3.0           demand_i: 120.0           work
715 load_i: 120.0   work load gap_i: 0
716 V_id: 5          li: 8.0           xi: 4.0            bow of i: 0.0           tail of i: 8.0           gama_i0: 2.0           gama_i1: 3.0
717 .0              gama_i1 + 1: 4.0       gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 120.0           work load_i: 0
718 load_i: 120.0   work load gap_i: 0
719 V_id: 6          li: 8.0           xi: 12.0           bow of i: 8.0           tail of i: 16.0           gama_i0: 0.0           gama_i1: 0.0
720 .0              gama_i1 + 1: 1.0       gama_i1 - gama_i0: 0.0           duration_time_i: 1.0           demand_i: 100.0           work
721 load_i: 100.0   work load gap_i: 0
722 V_id: 7          li: 3.0           xi: 20.5           bow of i: 19.0           tail of i: 22.0           gama_i0: 8.0           gama_i1: 9.0
723 .0              gama_i1 + 1: 10.0      gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 60.0           work
724 load_i: 60.0    work load gap_i: 0
725 V_id: 8          li: 5.0           xi: 17.5           bow of i: 15.0           tail of i: 20.0           gama_i0: 3.0           gama_i1: 4.0
726 .0              gama_i1 + 1: 5.0       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: 9          li: 6.0           xi: 25.0           bow of i: 22.0           tail of i: 28.0           gama_i0: 0.0           gama_i1: 1.0
729 .0              gama_i1 + 1: 2.0       gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 60.0           work
730 load_i: 60.0    work load gap_i: 0
731 V_id: 10         li: 3.0           xi: 9.5            bow of i: 8.0           tail of i: 11.0           gama_i0: 3.0           gama_i1: 5.0
732 .0              gama_i1 + 1: 6.0       gama_i1 - gama_i0: 2.0           duration_time_i: 3.0           demand_i: 160.0           work
733 load_i: 160.0   work load gap_i: 0
734 V_id: 11         li: 4.0           xi: 13.0           bow of i: 11.0           tail of i: 15.0           gama_i0: 3.0           gama_i1: 1.0
735 .0              gama_i1 + 1: 7.0       gama_i1 - gama_i0: 3.0           duration_time_i: 4.0           demand_i: 140.0           work
736 load_i: 140.0   work load gap_i: 0
737 V_id: 12         li: 3.0           xi: 20.5           bow of i: 19.0           tail of i: 22.0           gama_i0: 0.0           gama_i1: 1.0
738 .0              gama_i1 + 1: 2.0       gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 60.0           work
739 load_i: 60.0    work load gap_i: 0
740 V_id: 13         li: 8.0           xi: 4.0            bow of i: 0.0           tail of i: 8.0           gama_i0: 4.0           gama_i1: 4.0
741 .0              gama_i1 + 1: 5.0       gama_i1 - gama_i0: 0.0           duration_time_i: 1.0           demand_i: 160.0           work load_i: 0
742 load_i: 160.0   work load gap_i: 0
743 V_id: 14         li: 8.0           xi: 4.0            bow of i: 0.0           tail of i: 8.0           gama_i0: 0.0           gama_i1: 1.0
744 .0              gama_i1 + 1: 2.0       gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 120.0           work load_i: 0
745 load_i: 120.0   work load gap_i: 0
746 V_id: 15         li: 7.0           xi: 11.5           bow of i: 8.0           tail of i: 15.0           gama_i0: 1.0           gama_i1: 1.0
747 .0              gama_i1 + 1: 3.0       gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 60.0           work
748 load_i: 60.0    work load gap_i: 0
749 V_id: 16         li: 3.0           xi: 17.5           bow of i: 16.0           tail of i: 19.0           gama_i0: 0.0           gama_i1: 1.0
750 .0              gama_i1 + 1: 3.0       gama_i1 - gama_i0: 2.0           duration_time_i: 3.0           demand_i: 120.0           work
751 load_i: 120.0   work load gap_i: 0

```

unknown

```
718  
719 Algorithm finished and the total CPU time: 439 s  
720 End  
721
```