

unknown

```

80     cord_individual_obj[indivial_i,:] = [ 16. 10. 166. 176.]
81     cord_individual_obj[indivial_i,:] = [ 17. 9. 191. 200.]
82     cord_individual_obj[indivial_i,:] = [ 18. 9. 145. 154.]
83     cord_individual_obj[indivial_i,:] = [ 19. 9. 97. 106.]
84     cord_individual_obj[indivial_i,:] = [ 20. 11. 117. 128.]
85     cord_individual_obj[indivial_i,:] = [ 21. 10. 136. 146.]
86     cord_individual_obj[indivial_i,:] = [ 22. 7. 127. 134.]
87     cord_individual_obj[indivial_i,:] = [ 23. 10. 204. 214.]
88     cord_individual_obj[indivial_i,:] = [ 24. 7. 157. 164.]
89
90 min(cord_individual_obj[:,3]) = 100.0
91 historl_G_best_iter[iter, 3] = 100.0
92 Begin iteration:
93
94 iter = 2
95     cord_individual_obj[indivial_i,:] = [ 0. 8. 157. 165.]
96     cord_individual_obj[indivial_i,:] = [ 1. 9. 100. 109.]
97     cord_individual_obj[indivial_i,:] = [ 2. 9. 112. 121.]
98     cord_individual_obj[indivial_i,:] = [ 3. 11. 138. 149.]
99     cord_individual_obj[indivial_i,:] = [ 4. 9. 197. 206.]
100    cord_individual_obj[indivial_i,:] = [ 5. 9. 173. 182.]
101    cord_individual_obj[indivial_i,:] = [ 6. 8. 228. 236.]
102    cord_individual_obj[indivial_i,:] = [ 7. 11. 102. 113.]
103    cord_individual_obj[indivial_i,:] = [ 8. 10. 187. 197.]
104    cord_individual_obj[indivial_i,:] = [ 9. 10. 187. 197.]
105    cord_individual_obj[indivial_i,:] = [ 10. 8. 128. 136.]
106    cord_individual_obj[indivial_i,:] = [ 11. 8. 123. 131.]
107    cord_individual_obj[indivial_i,:] = [ 12. 8. 125. 133.]
108    cord_individual_obj[indivial_i,:] = [ 13. 10. 209. 219.]
109    cord_individual_obj[indivial_i,:] = [ 14. 12. 104. 116.]
110    cord_individual_obj[indivial_i,:] = [ 15. 10. 220. 230.]
111    cord_individual_obj[indivial_i,:] = [ 16. 9. 181. 190.]
112    cord_individual_obj[indivial_i,:] = [ 17. 8. 142. 150.]
113    cord_individual_obj[indivial_i,:] = [ 18. 11. 137. 148.]
114    cord_individual_obj[indivial_i,:] = [ 19. 9. 149. 158.]
115    cord_individual_obj[indivial_i,:] = [ 20. 10. 166. 176.]
116    cord_individual_obj[indivial_i,:] = [ 21. 8. 98. 106.]
117    cord_individual_obj[indivial_i,:] = [ 22. 7. 225. 232.]
118    cord_individual_obj[indivial_i,:] = [ 23. 8. 92. 100.]
119    cord_individual_obj[indivial_i,:] = [ 24. 9. 173. 182.]
120
121 min(cord_individual_obj[:,3]) = 100.0
122 historl_G_best_iter[iter, 3] = 100.0
123 Begin iteration:
124
125 iter = 3
126     cord_individual_obj[indivial_i,:] = [ 0. 9. 184. 193.]
127     cord_individual_obj[indivial_i,:] = [ 1. 11. 148. 159.]
128     cord_individual_obj[indivial_i,:] = [ 2. 8. 163. 171.]
129     cord_individual_obj[indivial_i,:] = [ 3. 11. 141. 152.]
130     cord_individual_obj[indivial_i,:] = [ 4. 10. 173. 183.]
131     cord_individual_obj[indivial_i,:] = [ 5. 10. 114. 124.]
132     cord_individual_obj[indivial_i,:] = [ 6. 8. 92. 100.]
133     cord_individual_obj[indivial_i,:] = [ 7. 8. 140. 148.]
134     cord_individual_obj[indivial_i,:] = [ 8. 8. 165. 173.]
135     cord_individual_obj[indivial_i,:] = [ 9. 9. 70. 79.]
136     cord_individual_obj[indivial_i,:] = [ 10. 10. 152. 162.]
137     cord_individual_obj[indivial_i,:] = [ 11. 10. 184. 194.]
138     cord_individual_obj[indivial_i,:] = [ 12. 9. 175. 184.]
139     cord_individual_obj[indivial_i,:] = [ 13. 12. 146. 158.]
140     cord_individual_obj[indivial_i,:] = [ 14. 9. 88. 97.]
141     cord_individual_obj[indivial_i,:] = [ 15. 10. 151. 161.]
142     cord_individual_obj[indivial_i,:] = [ 16. 8. 130. 138.]
143     cord_individual_obj[indivial_i,:] = [ 17. 9. 146. 155.]
144     cord_individual_obj[indivial_i,:] = [ 18. 9. 147. 156.]
145     cord_individual_obj[indivial_i,:] = [ 19. 11. 187. 198.]
146     cord_individual_obj[indivial_i,:] = [ 20. 9. 117. 126.]
147     cord_individual_obj[indivial_i,:] = [ 21. 10. 132. 142.]
148     cord_individual_obj[indivial_i,:] = [ 22. 8. 75. 83.]
149     cord_individual_obj[indivial_i,:] = [ 23. 10. 139. 149.]
150     cord_individual_obj[indivial_i,:] = [ 24. 11. 74. 85.]
151
152 min(cord_individual_obj[:,3]) = 79.0
153 historl_G_best_iter[iter, 3] = 79.0
154 Begin iteration:
155
156 iter = 4
157     cord_individual_obj[indivial_i,:] = [ 0. 8. 166. 174.]
158     cord_individual_obj[indivial_i,:] = [ 1. 9. 205. 214.]
159     cord_individual_obj[indivial_i,:] = [ 2. 12. 117. 129.]
160     cord_individual_obj[indivial_i,:] = [ 3. 10. 188. 198.]
161     cord_individual_obj[indivial_i,:] = [ 4. 8. 93. 101.]
162     cord_individual_obj[indivial_i,:] = [ 5. 9. 138. 147.]
163     cord_individual_obj[indivial_i,:] = [ 6. 10. 118. 128.]

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164 cord_individual_obj[indivial_i,:] = [ 7. 10. 181. 191.]
165 cord_individual_obj[indivial_i,:] = [ 8. 9. 158. 167.]
166 cord_individual_obj[indivial_i,:] = [ 9. 11. 118. 129.]
167 cord_individual_obj[indivial_i,:] = [ 10. 9. 92. 101.]
168 cord_individual_obj[indivial_i,:] = [ 11. 9. 148. 157.]
169 cord_individual_obj[indivial_i,:] = [ 12. 12. 170. 182.]
170 cord_individual_obj[indivial_i,:] = [ 13. 7. 97. 104.]
171 cord_individual_obj[indivial_i,:] = [ 14. 9. 161. 170.]
172 cord_individual_obj[indivial_i,:] = [ 15. 7. 165. 172.]
173 cord_individual_obj[indivial_i,:] = [ 16. 10. 155. 165.]
174 cord_individual_obj[indivial_i,:] = [ 17. 8. 127. 135.]
175 cord_individual_obj[indivial_i,:] = [ 18. 7. 183. 190.]
176 cord_individual_obj[indivial_i,:] = [ 19. 9. 70. 79.]
177 cord_individual_obj[indivial_i,:] = [ 20. 9. 94. 103.]
178 cord_individual_obj[indivial_i,:] = [ 21. 10. 101. 111.]
179 cord_individual_obj[indivial_i,:] = [ 22. 8. 116. 124.]
180 cord_individual_obj[indivial_i,:] = [ 23. 8. 73. 81.]
181 cord_individual_obj[indivial_i,:] = [ 24. 8. 187. 195.]
182
183 min(cord_individual_obj[:,3]) = 79.0
184 historl_G_best_iter[iter,3] = 79.0
185 Begin iteration:
186
187 iter = 5
188 cord_individual_obj[indivial_i,:] = [ 0. 8. 125. 133.]
189 cord_individual_obj[indivial_i,:] = [ 1. 9. 70. 79.]
190 cord_individual_obj[indivial_i,:] = [ 2. 8. 198. 206.]
191 cord_individual_obj[indivial_i,:] = [ 3. 9. 188. 197.]
192 cord_individual_obj[indivial_i,:] = [ 4. 9. 160. 169.]
193 cord_individual_obj[indivial_i,:] = [ 5. 8. 178. 186.]
194 cord_individual_obj[indivial_i,:] = [ 6. 9. 153. 162.]
195 cord_individual_obj[indivial_i,:] = [ 7. 9. 73. 82.]
196 cord_individual_obj[indivial_i,:] = [ 8. 9. 168. 177.]
197 cord_individual_obj[indivial_i,:] = [ 9. 9. 92. 101.]
198 cord_individual_obj[indivial_i,:] = [ 10. 8. 130. 138.]
199 cord_individual_obj[indivial_i,:] = [ 11. 8. 183. 191.]
200 cord_individual_obj[indivial_i,:] = [ 12. 7. 158. 165.]
201 cord_individual_obj[indivial_i,:] = [ 13. 8. 241. 249.]
202 cord_individual_obj[indivial_i,:] = [ 14. 9. 121. 130.]
203 cord_individual_obj[indivial_i,:] = [ 15. 11. 199. 210.]
204 cord_individual_obj[indivial_i,:] = [ 16. 8. 177. 185.]
205 cord_individual_obj[indivial_i,:] = [ 17. 10. 111. 121.]
206 cord_individual_obj[indivial_i,:] = [ 18. 9. 147. 156.]
207 cord_individual_obj[indivial_i,:] = [ 19. 10. 149. 159.]
208 cord_individual_obj[indivial_i,:] = [ 20. 14. 156. 170.]
209 cord_individual_obj[indivial_i,:] = [ 21. 9. 132. 141.]
210 cord_individual_obj[indivial_i,:] = [ 22. 9. 169. 178.]
211 cord_individual_obj[indivial_i,:] = [ 23. 8. 125. 133.]
212 cord_individual_obj[indivial_i,:] = [ 24. 9. 139. 148.]
213
214 min(cord_individual_obj[:,3]) = 79.0
215 historl_G_best_iter[iter,3] = 79.0
216 Begin iteration:
217
218 iter = 6
219 cord_individual_obj[indivial_i,:] = [ 0. 12. 116. 128.]
220 cord_individual_obj[indivial_i,:] = [ 1. 10. 146. 156.]
221 cord_individual_obj[indivial_i,:] = [ 2. 11. 165. 176.]
222 cord_individual_obj[indivial_i,:] = [ 3. 11. 154. 165.]
223 cord_individual_obj[indivial_i,:] = [ 4. 7. 104. 111.]
224 cord_individual_obj[indivial_i,:] = [ 5. 10. 149. 159.]
225 cord_individual_obj[indivial_i,:] = [ 6. 9. 98. 107.]
226 cord_individual_obj[indivial_i,:] = [ 7. 10. 131. 141.]
227 cord_individual_obj[indivial_i,:] = [ 8. 8. 119. 127.]
228 cord_individual_obj[indivial_i,:] = [ 9. 11. 115. 126.]
229 cord_individual_obj[indivial_i,:] = [ 10. 9. 126. 135.]
230 cord_individual_obj[indivial_i,:] = [ 11. 10. 207. 217.]
231 cord_individual_obj[indivial_i,:] = [ 12. 9. 187. 196.]
232 cord_individual_obj[indivial_i,:] = [ 13. 9. 70. 79.]
233 cord_individual_obj[indivial_i,:] = [ 14. 9. 129. 138.]
234 cord_individual_obj[indivial_i,:] = [ 15. 9. 158. 167.]
235 cord_individual_obj[indivial_i,:] = [ 16. 10. 128. 138.]
236 cord_individual_obj[indivial_i,:] = [ 17. 10. 145. 155.]
237 cord_individual_obj[indivial_i,:] = [ 18. 9. 178. 187.]
238 cord_individual_obj[indivial_i,:] = [ 19. 8. 110. 118.]
239 cord_individual_obj[indivial_i,:] = [ 20. 11. 158. 169.]
240 cord_individual_obj[indivial_i,:] = [ 21. 12. 130. 142.]
241 cord_individual_obj[indivial_i,:] = [ 22. 9. 94. 103.]
242 cord_individual_obj[indivial_i,:] = [ 23. 10. 122. 132.]
243 cord_individual_obj[indivial_i,:] = [ 24. 10. 82. 92.]
244
245 min(cord_individual_obj[:,3]) = 79.0
246 historl_G_best_iter[iter,3] = 79.0
247 Begin iteration:

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248
249 iter = 7
250 cord_individual_obj[indivial_i, :] = [ 0. 9. 111. 120.]
251 cord_individual_obj[indivial_i, :] = [ 1. 11. 169. 180.]
252 cord_individual_obj[indivial_i, :] = [ 2. 8. 180. 188.]
253 cord_individual_obj[indivial_i, :] = [ 3. 9. 160. 169.]
254 cord_individual_obj[indivial_i, :] = [ 4. 9. 135. 144.]
255 cord_individual_obj[indivial_i, :] = [ 5. 11. 104. 115.]
256 cord_individual_obj[indivial_i, :] = [ 6. 8. 127. 135.]
257 cord_individual_obj[indivial_i, :] = [ 7. 9. 179. 188.]
258 cord_individual_obj[indivial_i, :] = [ 8. 8. 177. 185.]
259 cord_individual_obj[indivial_i, :] = [ 9. 10. 200. 210.]
260 cord_individual_obj[indivial_i, :] = [ 10. 8. 140. 148.]
261 cord_individual_obj[indivial_i, :] = [ 11. 9. 70. 79.]
262 cord_individual_obj[indivial_i, :] = [ 12. 8. 136. 144.]
263 cord_individual_obj[indivial_i, :] = [ 13. 8. 140. 148.]
264 cord_individual_obj[indivial_i, :] = [ 14. 9. 109. 118.]
265 cord_individual_obj[indivial_i, :] = [ 15. 8. 119. 127.]
266 cord_individual_obj[indivial_i, :] = [ 16. 9. 151. 160.]
267 cord_individual_obj[indivial_i, :] = [ 17. 9. 160. 169.]
268 cord_individual_obj[indivial_i, :] = [ 18. 8. 213. 221.]
269 cord_individual_obj[indivial_i, :] = [ 19. 10. 119. 129.]
270 cord_individual_obj[indivial_i, :] = [ 20. 11. 105. 116.]
271 cord_individual_obj[indivial_i, :] = [ 21. 10. 160. 170.]
272 cord_individual_obj[indivial_i, :] = [ 22. 9. 147. 156.]
273 cord_individual_obj[indivial_i, :] = [ 23. 9. 236. 245.]
274 cord_individual_obj[indivial_i, :] = [ 24. 12. 193. 205.]
275

276 min(cord_individual_obj[:, 3]) = 79.0
277 historl_G_best_iter[iter, 3] = 79.0
278 Begin iteration:
279
280 iter = 8
281 cord_individual_obj[indivial_i, :] = [ 0. 9. 115. 124.]
282 cord_individual_obj[indivial_i, :] = [ 1. 9. 170. 179.]
283 cord_individual_obj[indivial_i, :] = [ 2. 9. 133. 142.]
284 cord_individual_obj[indivial_i, :] = [ 3. 9. 171. 180.]
285 cord_individual_obj[indivial_i, :] = [ 4. 8. 118. 126.]
286 cord_individual_obj[indivial_i, :] = [ 5. 9. 136. 145.]
287 cord_individual_obj[indivial_i, :] = [ 6. 10. 151. 161.]
288 cord_individual_obj[indivial_i, :] = [ 7. 8. 184. 192.]
289 cord_individual_obj[indivial_i, :] = [ 8. 8. 108. 116.]
290 cord_individual_obj[indivial_i, :] = [ 9. 9. 82. 91.]
291 cord_individual_obj[indivial_i, :] = [ 10. 9. 133. 142.]
292 cord_individual_obj[indivial_i, :] = [ 11. 9. 161. 170.]
293 cord_individual_obj[indivial_i, :] = [ 12. 10. 79. 89.]
294 cord_individual_obj[indivial_i, :] = [ 13. 8. 157. 165.]
295 cord_individual_obj[indivial_i, :] = [ 14. 9. 176. 185.]
296 cord_individual_obj[indivial_i, :] = [ 15. 8. 132. 140.]
297 cord_individual_obj[indivial_i, :] = [ 16. 11. 149. 160.]
298 cord_individual_obj[indivial_i, :] = [ 17. 10. 110. 120.]
299 cord_individual_obj[indivial_i, :] = [ 18. 8. 124. 132.]
300 cord_individual_obj[indivial_i, :] = [ 19. 10. 111. 121.]
301 cord_individual_obj[indivial_i, :] = [ 20. 13. 106. 119.]
302 cord_individual_obj[indivial_i, :] = [ 21. 9. 126. 135.]
303 cord_individual_obj[indivial_i, :] = [ 22. 9. 205. 214.]
304 cord_individual_obj[indivial_i, :] = [ 23. 9. 70. 79.]
305 cord_individual_obj[indivial_i, :] = [ 24. 10. 97. 107.]
306

307 min(cord_individual_obj[:, 3]) = 79.0
308 historl_G_best_iter[iter, 3] = 79.0
309 Begin iteration:
310
311 iter = 9
312 cord_individual_obj[indivial_i, :] = [ 0. 9. 129. 138.]
313 cord_individual_obj[indivial_i, :] = [ 1. 8. 127. 135.]
314 cord_individual_obj[indivial_i, :] = [ 2. 13. 109. 122.]
315 cord_individual_obj[indivial_i, :] = [ 3. 8. 131. 139.]
316 cord_individual_obj[indivial_i, :] = [ 4. 9. 142. 151.]
317 cord_individual_obj[indivial_i, :] = [ 5. 9. 150. 159.]
318 cord_individual_obj[indivial_i, :] = [ 6. 10. 90. 100.]
319 cord_individual_obj[indivial_i, :] = [ 7. 9. 173. 182.]
320 cord_individual_obj[indivial_i, :] = [ 8. 8. 157. 165.]
321 cord_individual_obj[indivial_i, :] = [ 9. 9. 180. 189.]
322 cord_individual_obj[indivial_i, :] = [ 10. 8. 184. 192.]
323 cord_individual_obj[indivial_i, :] = [ 11. 10. 147. 157.]
324 cord_individual_obj[indivial_i, :] = [ 12. 8. 147. 155.]
325 cord_individual_obj[indivial_i, :] = [ 13. 8. 113. 121.]
326 cord_individual_obj[indivial_i, :] = [ 14. 9. 116. 125.]
327 cord_individual_obj[indivial_i, :] = [ 15. 10. 97. 107.]
328 cord_individual_obj[indivial_i, :] = [ 16. 13. 132. 145.]
329 cord_individual_obj[indivial_i, :] = [ 17. 10. 137. 147.]
330 cord_individual_obj[indivial_i, :] = [ 18. 8. 179. 187.]
331 cord_individual_obj[indivial_i, :] = [ 19. 10. 108. 118.]

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unknown

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332 cord_individual_obj[indivial_i,:] = [ 20.  8. 128. 136.]
333 cord_individual_obj[indivial_i,:] = [ 21. 10. 94. 104.]
334 cord_individual_obj[indivial_i,:] = [22. 9. 70. 79.]
335 cord_individual_obj[indivial_i,:] = [23. 10. 74. 84.]
336 cord_individual_obj[indivial_i,:] = [ 24. 9. 130. 139.]
337
338 min(cord_individual_obj[:,3]) = 79.0
339 histol_G_best_iter[iter,3] = 79.0
340 Begin iteration:
341
342 iter = 10
343 cord_individual_obj[indivial_i,:] = [ 0.  9. 114. 123.]
344 cord_individual_obj[indivial_i,:] = [ 1.  8. 152. 160.]
345 cord_individual_obj[indivial_i,:] = [ 2. 10. 129. 139.]
346 cord_individual_obj[indivial_i,:] = [ 3.  9. 176. 185.]
347 cord_individual_obj[indivial_i,:] = [ 4.  9. 158. 167.]
348 cord_individual_obj[indivial_i,:] = [ 5.  8. 168. 176.]
349 cord_individual_obj[indivial_i,:] = [ 6.  9. 136. 145.]
350 cord_individual_obj[indivial_i,:] = [ 7.  8. 168. 176.]
351 cord_individual_obj[indivial_i,:] = [ 8.  8. 110. 118.]
352 cord_individual_obj[indivial_i,:] = [ 9. 11. 119. 130.]
353 cord_individual_obj[indivial_i,:] = [10. 9. 70. 79.]
354 cord_individual_obj[indivial_i,:] = [11. 11. 75. 86.]
355 cord_individual_obj[indivial_i,:] = [12. 12. 181. 193.]
356 cord_individual_obj[indivial_i,:] = [13. 7. 84. 91.]
357 cord_individual_obj[indivial_i,:] = [14. 8. 124. 132.]
358 cord_individual_obj[indivial_i,:] = [15. 8. 153. 161.]
359 cord_individual_obj[indivial_i,:] = [16. 12. 113. 125.]
360 cord_individual_obj[indivial_i,:] = [17. 8. 139. 147.]
361 cord_individual_obj[indivial_i,:] = [18. 8. 146. 154.]
362 cord_individual_obj[indivial_i,:] = [19. 10. 68. 78.]
363 cord_individual_obj[indivial_i,:] = [20. 11. 156. 167.]
364 cord_individual_obj[indivial_i,:] = [21. 11. 162. 173.]
365 cord_individual_obj[indivial_i,:] = [22. 10. 124. 134.]
366 cord_individual_obj[indivial_i,:] = [23. 11. 148. 159.]
367 cord_individual_obj[indivial_i,:] = [24. 11. 225. 236.]
368
369 min(cord_individual_obj[:,3]) = 78.0
370 histol_G_best_iter[iter,3] = 78.0
371 Begin iteration:
372
373 iter = 11
374 cord_individual_obj[indivial_i,:] = [ 0.  8. 142. 150.]
375 cord_individual_obj[indivial_i,:] = [ 1.  8. 119. 127.]
376 cord_individual_obj[indivial_i,:] = [ 2.  9. 185. 194.]
377 cord_individual_obj[indivial_i,:] = [ 3. 10. 180. 190.]
378 cord_individual_obj[indivial_i,:] = [ 4.  8. 143. 151.]
379 cord_individual_obj[indivial_i,:] = [ 5.  8. 131. 139.]
380 cord_individual_obj[indivial_i,:] = [ 6.  9. 133. 142.]
381 cord_individual_obj[indivial_i,:] = [ 7.  7. 146. 153.]
382 cord_individual_obj[indivial_i,:] = [ 8. 10. 141. 151.]
383 cord_individual_obj[indivial_i,:] = [ 9.  8. 129. 137.]
384 cord_individual_obj[indivial_i,:] = [10. 8. 214. 222.]
385 cord_individual_obj[indivial_i,:] = [11. 8. 111. 119.]
386 cord_individual_obj[indivial_i,:] = [12. 8. 123. 131.]
387 cord_individual_obj[indivial_i,:] = [13. 9. 101. 110.]
388 cord_individual_obj[indivial_i,:] = [14. 12. 176. 188.]
389 cord_individual_obj[indivial_i,:] = [15. 8. 170. 178.]
390 cord_individual_obj[indivial_i,:] = [16. 10. 199. 209.]
391 cord_individual_obj[indivial_i,:] = [17. 10. 129. 139.]
392 cord_individual_obj[indivial_i,:] = [18. 8. 112. 120.]
393 cord_individual_obj[indivial_i,:] = [19. 13. 119. 132.]
394 cord_individual_obj[indivial_i,:] = [20. 9. 131. 140.]
395 cord_individual_obj[indivial_i,:] = [21. 11. 164. 175.]
396 cord_individual_obj[indivial_i,:] = [22. 11. 115. 126.]
397 cord_individual_obj[indivial_i,:] = [23. 10. 182. 192.]
398 cord_individual_obj[indivial_i,:] = [24. 10. 68. 78.]
399
400 min(cord_individual_obj[:,3]) = 78.0
401 histol_G_best_iter[iter,3] = 78.0
402 Begin iteration:
403
404 iter = 12
405 cord_individual_obj[indivial_i,:] = [ 0.  8. 153. 161.]
406 cord_individual_obj[indivial_i,:] = [ 1.  8. 151. 159.]
407 cord_individual_obj[indivial_i,:] = [ 2.  8. 167. 175.]
408 cord_individual_obj[indivial_i,:] = [ 3.  9. 154. 163.]
409 cord_individual_obj[indivial_i,:] = [ 4. 12. 152. 164.]
410 cord_individual_obj[indivial_i,:] = [ 5.  9. 204. 213.]
411 cord_individual_obj[indivial_i,:] = [ 6. 10. 116. 126.]
412 cord_individual_obj[indivial_i,:] = [ 7.  9. 118. 127.]
413 cord_individual_obj[indivial_i,:] = [ 8. 11. 158. 169.]
414 cord_individual_obj[indivial_i,:] = [ 9.  9. 185. 194.]
415 cord_individual_obj[indivial_i,:] = [10. 10. 68. 78.]
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416 cord_individual_obj[indivial_i,:] = [11, 10, 88, 98.]
417 cord_individual_obj[indivial_i,:] = [12, 9, 121, 130.]
418 cord_individual_obj[indivial_i,:] = [13, 9, 114, 123.]
419 cord_individual_obj[indivial_i,:] = [14, 9, 161, 170.]
420 cord_individual_obj[indivial_i,:] = [15, 9, 144, 153.]
421 cord_individual_obj[indivial_i,:] = [16, 9, 134, 143.]
422 cord_individual_obj[indivial_i,:] = [17, 8, 124, 132.]
423 cord_individual_obj[indivial_i,:] = [18, 10, 127, 137.]
424 cord_individual_obj[indivial_i,:] = [19, 11, 117, 128.]
425 cord_individual_obj[indivial_i,:] = [20, 10, 173, 183.]
426 cord_individual_obj[indivial_i,:] = [21, 10, 143, 153.]
427 cord_individual_obj[indivial_i,:] = [22, 8, 184, 192.]
428 cord_individual_obj[indivial_i,:] = [23, 9, 88, 97.]
429 cord_individual_obj[indivial_i,:] = [24, 11, 158, 169.]
430
431 min(cord_individual_obj[:,3]) = 78.0
432 histol_G_best_iter[iter,3] = 78.0
433 Begin iteration:
434
435 iter = 13
436 cord_individual_obj[indivial_i,:] = [0, 9, 100, 109.]
437 cord_individual_obj[indivial_i,:] = [1, 9, 131, 140.]
438 cord_individual_obj[indivial_i,:] = [2, 7, 140, 147.]
439 cord_individual_obj[indivial_i,:] = [3, 10, 163, 173.]
440 cord_individual_obj[indivial_i,:] = [4, 8, 149, 157.]
441 cord_individual_obj[indivial_i,:] = [5, 10, 68, 78.]
442 cord_individual_obj[indivial_i,:] = [6, 12, 146, 158.]
443 cord_individual_obj[indivial_i,:] = [7, 9, 83, 92.]
444 cord_individual_obj[indivial_i,:] = [8, 9, 102, 111.]
445 cord_individual_obj[indivial_i,:] = [9, 10, 95, 105.]
446 cord_individual_obj[indivial_i,:] = [10, 10, 107, 117.]
447 cord_individual_obj[indivial_i,:] = [11, 11, 151, 162.]
448 cord_individual_obj[indivial_i,:] = [12, 8, 101, 109.]
449 cord_individual_obj[indivial_i,:] = [13, 9, 129, 138.]
450 cord_individual_obj[indivial_i,:] = [14, 10, 93, 103.]
451 cord_individual_obj[indivial_i,:] = [15, 8, 106, 114.]
452 cord_individual_obj[indivial_i,:] = [16, 11, 135, 146.]
453 cord_individual_obj[indivial_i,:] = [17, 12, 126, 138.]
454 cord_individual_obj[indivial_i,:] = [18, 10, 116, 126.]
455 cord_individual_obj[indivial_i,:] = [19, 12, 76, 88.]
456 cord_individual_obj[indivial_i,:] = [20, 8, 110, 118.]
457 cord_individual_obj[indivial_i,:] = [21, 9, 130, 139.]
458 cord_individual_obj[indivial_i,:] = [22, 8, 168, 176.]
459 cord_individual_obj[indivial_i,:] = [23, 9, 114, 123.]
460 cord_individual_obj[indivial_i,:] = [24, 11, 107, 118.]
461
462 min(cord_individual_obj[:,3]) = 78.0
463 histol_G_best_iter[iter,3] = 78.0
464 Begin iteration:
465
466 iter = 14
467 cord_individual_obj[indivial_i,:] = [0, 9, 147, 156.]
468 cord_individual_obj[indivial_i,:] = [1, 9, 158, 167.]
469 cord_individual_obj[indivial_i,:] = [2, 11, 183, 194.]
470 cord_individual_obj[indivial_i,:] = [3, 11, 129, 140.]
471 cord_individual_obj[indivial_i,:] = [4, 10, 102, 112.]
472 cord_individual_obj[indivial_i,:] = [5, 8, 141, 149.]
473 cord_individual_obj[indivial_i,:] = [6, 9, 101, 110.]
474 cord_individual_obj[indivial_i,:] = [7, 9, 97, 106.]
475 cord_individual_obj[indivial_i,:] = [8, 10, 104, 114.]
476 cord_individual_obj[indivial_i,:] = [9, 9, 111, 120.]
477 cord_individual_obj[indivial_i,:] = [10, 9, 96, 105.]
478 cord_individual_obj[indivial_i,:] = [11, 11, 92, 103.]
479 cord_individual_obj[indivial_i,:] = [12, 8, 163, 171.]
480 cord_individual_obj[indivial_i,:] = [13, 9, 138, 147.]
481 cord_individual_obj[indivial_i,:] = [14, 9, 131, 140.]
482 cord_individual_obj[indivial_i,:] = [15, 9, 109, 118.]
483 cord_individual_obj[indivial_i,:] = [16, 9, 140, 149.]
484 cord_individual_obj[indivial_i,:] = [17, 10, 128, 138.]
485 cord_individual_obj[indivial_i,:] = [18, 8, 100, 108.]
486 cord_individual_obj[indivial_i,:] = [19, 9, 141, 150.]
487 cord_individual_obj[indivial_i,:] = [20, 9, 135, 144.]
488 cord_individual_obj[indivial_i,:] = [21, 8, 189, 197.]
489 cord_individual_obj[indivial_i,:] = [22, 10, 68, 78.]
490 cord_individual_obj[indivial_i,:] = [23, 11, 150, 161.]
491 cord_individual_obj[indivial_i,:] = [24, 9, 153, 162.]
492
493 min(cord_individual_obj[:,3]) = 78.0
494 histol_G_best_iter[iter,3] = 78.0
495 Begin iteration:
496
497 iter = 15
498 cord_individual_obj[indivial_i,:] = [0, 10, 102, 112.]
499 cord_individual_obj[indivial_i,:] = [1, 10, 180, 190.]

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500 cord_individual_obj[indivial_i, :] = [ 2. 9. 145. 154.]
501 cord_individual_obj[indivial_i, :] = [ 3. 10. 130. 140.]
502 cord_individual_obj[indivial_i, :] = [ 4. 10. 138. 148.]
503 cord_individual_obj[indivial_i, :] = [ 5. 10. 151. 161.]
504 cord_individual_obj[indivial_i, :] = [ 6. 10. 113. 123.]
505 cord_individual_obj[indivial_i, :] = [ 7. 9. 144. 153.]
506 cord_individual_obj[indivial_i, :] = [ 8. 9. 98. 107.]
507 cord_individual_obj[indivial_i, :] = [ 9. 9. 122. 131.]
508 cord_individual_obj[indivial_i, :] = [10. 9. 90. 99.]
509 cord_individual_obj[indivial_i, :] = [11. 10. 110. 120.]
510 cord_individual_obj[indivial_i, :] = [12. 7. 83. 90.]
511 cord_individual_obj[indivial_i, :] = [13. 9. 201. 210.]
512 cord_individual_obj[indivial_i, :] = [14. 9. 252. 261.]
513 cord_individual_obj[indivial_i, :] = [15. 10. 119. 129.]
514 cord_individual_obj[indivial_i, :] = [16. 12. 206. 218.]
515 cord_individual_obj[indivial_i, :] = [17. 10. 132. 142.]
516 cord_individual_obj[indivial_i, :] = [18. 8. 202. 210.]
517 cord_individual_obj[indivial_i, :] = [19. 11. 130. 141.]
518 cord_individual_obj[indivial_i, :] = [20. 9. 148. 157.]
519 cord_individual_obj[indivial_i, :] = [21. 10. 68. 78.]
520 cord_individual_obj[indivial_i, :] = [22. 9. 153. 162.]
521 cord_individual_obj[indivial_i, :] = [23. 9. 107. 116.]
522 cord_individual_obj[indivial_i, :] = [24. 10. 228. 238.]
523
524 min(cord_individual_obj[:, 3]) = 78.0
525 histol_G_best_iter[iter, 3] = 78.0
526 Begin iteration:
527
528 iter = 16
529 cord_individual_obj[indivial_i, :] = [ 0. 11. 152. 163.]
530 cord_individual_obj[indivial_i, :] = [ 1. 8. 123. 131.]
531 cord_individual_obj[indivial_i, :] = [ 2. 9. 113. 122.]
532 cord_individual_obj[indivial_i, :] = [ 3. 9. 146. 155.]
533 cord_individual_obj[indivial_i, :] = [ 4. 10. 148. 158.]
534 cord_individual_obj[indivial_i, :] = [ 5. 9. 119. 128.]
535 cord_individual_obj[indivial_i, :] = [ 6. 12. 144. 156.]
536 cord_individual_obj[indivial_i, :] = [ 7. 10. 130. 140.]
537 cord_individual_obj[indivial_i, :] = [ 8. 10. 141. 151.]
538 cord_individual_obj[indivial_i, :] = [ 9. 7. 157. 164.]
539 cord_individual_obj[indivial_i, :] = [10. 9. 175. 184.]
540 cord_individual_obj[indivial_i, :] = [11. 11. 105. 116.]
541 cord_individual_obj[indivial_i, :] = [12. 9. 196. 205.]
542 cord_individual_obj[indivial_i, :] = [13. 9. 138. 147.]
543 cord_individual_obj[indivial_i, :] = [14. 10. 68. 78.]
544 cord_individual_obj[indivial_i, :] = [15. 11. 134. 145.]
545 cord_individual_obj[indivial_i, :] = [16. 9. 154. 163.]
546 cord_individual_obj[indivial_i, :] = [17. 10. 123. 133.]
547 cord_individual_obj[indivial_i, :] = [18. 9. 124. 133.]
548 cord_individual_obj[indivial_i, :] = [19. 9. 177. 186.]
549 cord_individual_obj[indivial_i, :] = [20. 12. 194. 206.]
550 cord_individual_obj[indivial_i, :] = [21. 10. 124. 134.]
551 cord_individual_obj[indivial_i, :] = [22. 9. 186. 195.]
552 cord_individual_obj[indivial_i, :] = [23. 10. 129. 139.]
553 cord_individual_obj[indivial_i, :] = [24. 9. 87. 96.]
554
555 min(cord_individual_obj[:, 3]) = 78.0
556 histol_G_best_iter[iter, 3] = 78.0
557 Begin iteration:
558
559 iter = 17
560 cord_individual_obj[indivial_i, :] = [ 0. 8. 117. 125.]
561 cord_individual_obj[indivial_i, :] = [ 1. 10. 90. 100.]
562 cord_individual_obj[indivial_i, :] = [ 2. 9. 107. 116.]
563 cord_individual_obj[indivial_i, :] = [ 3. 11. 119. 130.]
564 cord_individual_obj[indivial_i, :] = [ 4. 9. 161. 170.]
565 cord_individual_obj[indivial_i, :] = [ 5. 8. 136. 144.]
566 cord_individual_obj[indivial_i, :] = [ 6. 9. 176. 185.]
567 cord_individual_obj[indivial_i, :] = [ 7. 11. 100. 111.]
568 cord_individual_obj[indivial_i, :] = [ 8. 9. 186. 195.]
569 cord_individual_obj[indivial_i, :] = [ 9. 9. 118. 127.]
570 cord_individual_obj[indivial_i, :] = [10. 10. 92. 102.]
571 cord_individual_obj[indivial_i, :] = [11. 11. 126. 137.]
572 cord_individual_obj[indivial_i, :] = [12. 8. 96. 104.]
573 cord_individual_obj[indivial_i, :] = [13. 10. 89. 99.]
574 cord_individual_obj[indivial_i, :] = [14. 11. 149. 160.]
575 cord_individual_obj[indivial_i, :] = [15. 9. 97. 106.]
576 cord_individual_obj[indivial_i, :] = [16. 11. 111. 122.]
577 cord_individual_obj[indivial_i, :] = [17. 10. 128. 138.]
578 cord_individual_obj[indivial_i, :] = [18. 10. 120. 130.]
579 cord_individual_obj[indivial_i, :] = [19. 10. 124. 134.]
580 cord_individual_obj[indivial_i, :] = [20. 10. 68. 78.]
581 cord_individual_obj[indivial_i, :] = [21. 8. 134. 142.]
582 cord_individual_obj[indivial_i, :] = [22. 9. 136. 145.]
583 cord_individual_obj[indivial_i, :] = [23. 10. 142. 152.]

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unknown

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584     cord_individual_obj[indivial_i,:] = [ 24. 10. 116. 126.]  
585  
586     min(cord_individual_obj[:,3]) = 78.0  
587     historl_G_best_iter[iter,3] = 78.0  
588 Begin iteration:  
589  
590 iter = 18  
591     cord_individual_obj[indivial_i,:] = [ 0. 10. 131. 141.]  
592     cord_individual_obj[indivial_i,:] = [ 1. 10. 158. 168.]  
593     cord_individual_obj[indivial_i,:] = [ 2. 11. 164. 175.]  
594     cord_individual_obj[indivial_i,:] = [ 3. 10. 99. 109.]  
595     cord_individual_obj[indivial_i,:] = [ 4. 9. 105. 114.]  
596     cord_individual_obj[indivial_i,:] = [ 5. 8. 145. 153.]  
597     cord_individual_obj[indivial_i,:] = [ 6. 10. 140. 150.]  
598     cord_individual_obj[indivial_i,:] = [ 7. 10. 100. 110.]  
599     cord_individual_obj[indivial_i,:] = [ 8. 10. 68. 78.]  
600     cord_individual_obj[indivial_i,:] = [ 9. 9. 169. 178.]  
601     cord_individual_obj[indivial_i,:] = [ 10. 10. 143. 153.]  
602     cord_individual_obj[indivial_i,:] = [ 11. 10. 177. 187.]  
603     cord_individual_obj[indivial_i,:] = [ 12. 8. 128. 136.]  
604     cord_individual_obj[indivial_i,:] = [ 13. 8. 108. 116.]  
605     cord_individual_obj[indivial_i,:] = [ 14. 10. 111. 121.]  
606     cord_individual_obj[indivial_i,:] = [ 15. 9. 93. 102.]  
607     cord_individual_obj[indivial_i,:] = [ 16. 9. 127. 136.]  
608     cord_individual_obj[indivial_i,:] = [ 17. 9. 127. 136.]  
609     cord_individual_obj[indivial_i,:] = [ 18. 11. 92. 103.]  
610     cord_individual_obj[indivial_i,:] = [ 19. 9. 114. 123.]  
611     cord_individual_obj[indivial_i,:] = [ 20. 8. 182. 190.]  
612     cord_individual_obj[indivial_i,:] = [ 21. 8. 112. 120.]  
613     cord_individual_obj[indivial_i,:] = [ 22. 9. 147. 156.]  
614     cord_individual_obj[indivial_i,:] = [ 23. 9. 170. 179.]  
615     cord_individual_obj[indivial_i,:] = [ 24. 8. 173. 181.]  
616  
617 min(cord_individual_obj[:,3]) = 78.0  
618 historl_G_best_iter[iter,3] = 78.0  
619 Begin iteration:  
620  
621 iter = 19  
622     cord_individual_obj[indivial_i,:] = [ 0. 9. 90. 99.]  
623     cord_individual_obj[indivial_i,:] = [ 1. 8. 128. 136.]  
624     cord_individual_obj[indivial_i,:] = [ 2. 10. 136. 146.]  
625     cord_individual_obj[indivial_i,:] = [ 3. 10. 87. 97.]  
626     cord_individual_obj[indivial_i,:] = [ 4. 11. 173. 184.]  
627     cord_individual_obj[indivial_i,:] = [ 5. 8. 120. 128.]  
628     cord_individual_obj[indivial_i,:] = [ 6. 11. 196. 207.]  
629     cord_individual_obj[indivial_i,:] = [ 7. 9. 93. 102.]  
630     cord_individual_obj[indivial_i,:] = [ 8. 9. 92. 101.]  
631     cord_individual_obj[indivial_i,:] = [ 9. 8. 141. 149.]  
632     cord_individual_obj[indivial_i,:] = [ 10. 10. 87. 97.]  
633     cord_individual_obj[indivial_i,:] = [ 11. 9. 102. 111.]  
634     cord_individual_obj[indivial_i,:] = [ 12. 8. 72. 80.]  
635     cord_individual_obj[indivial_i,:] = [ 13. 9. 119. 128.]  
636     cord_individual_obj[indivial_i,:] = [ 14. 9. 127. 136.]  
637     cord_individual_obj[indivial_i,:] = [ 15. 11. 117. 128.]  
638     cord_individual_obj[indivial_i,:] = [ 16. 10. 124. 134.]  
639     cord_individual_obj[indivial_i,:] = [ 17. 11. 150. 161.]  
640     cord_individual_obj[indivial_i,:] = [ 18. 8. 150. 158.]  
641     cord_individual_obj[indivial_i,:] = [ 19. 7. 101. 108.]  
642     cord_individual_obj[indivial_i,:] = [ 20. 10. 68. 78.]  
643     cord_individual_obj[indivial_i,:] = [ 21. 10. 185. 195.]  
644     cord_individual_obj[indivial_i,:] = [ 22. 12. 116. 128.]  
645     cord_individual_obj[indivial_i,:] = [ 23. 9. 149. 158.]  
646     cord_individual_obj[indivial_i,:] = [ 24. 10. 97. 107.]  
647  
648 min(cord_individual_obj[:,3]) = 78.0  
649 historl_G_best_iter[iter,3] = 78.0  
650 Begin iteration:  
651  
652 iter = 20  
653     cord_individual_obj[indivial_i,:] = [ 0. 10. 121. 131.]  
654     cord_individual_obj[indivial_i,:] = [ 1. 12. 111. 123.]  
655     cord_individual_obj[indivial_i,:] = [ 2. 9. 85. 94.]  
656     cord_individual_obj[indivial_i,:] = [ 3. 11. 124. 135.]  
657     cord_individual_obj[indivial_i,:] = [ 4. 9. 157. 166.]  
658     cord_individual_obj[indivial_i,:] = [ 5. 9. 146. 155.]  
659     cord_individual_obj[indivial_i,:] = [ 6. 10. 68. 78.]  
660     cord_individual_obj[indivial_i,:] = [ 7. 9. 106. 115.]  
661     cord_individual_obj[indivial_i,:] = [ 8. 10. 119. 129.]  
662     cord_individual_obj[indivial_i,:] = [ 9. 9. 87. 96.]  
663     cord_individual_obj[indivial_i,:] = [ 10. 9. 89. 98.]  
664     cord_individual_obj[indivial_i,:] = [ 11. 10. 199. 209.]  
665     cord_individual_obj[indivial_i,:] = [ 12. 8. 117. 125.]  
666     cord_individual_obj[indivial_i,:] = [ 13. 10. 93. 103.]  
667     cord_individual_obj[indivial_i,:] = [ 14. 10. 108. 118.]
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668 cord_individual_obj[indivial_i,:] = [ 15. 10. 120. 130.]
669 cord_individual_obj[indivial_i,:] = [ 16. 9. 158. 167.]
670 cord_individual_obj[indivial_i,:] = [ 17. 10. 97. 107.]
671 cord_individual_obj[indivial_i,:] = [ 18. 10. 94. 104.]
672 cord_individual_obj[indivial_i,:] = [ 19. 9. 84. 93.]
673 cord_individual_obj[indivial_i,:] = [ 20. 9. 161. 170.]
674 cord_individual_obj[indivial_i,:] = [ 21. 9. 133. 142.]
675 cord_individual_obj[indivial_i,:] = [ 22. 9. 168. 177.]
676 cord_individual_obj[indivial_i,:] = [ 23. 9. 190. 199.]
677 cord_individual_obj[indivial_i,:] = [ 24. 9. 93. 102.]
678
679 min(cord_individual_obj[:,3]) = 78.0
680 historl_G_best_iter[iter,3] = 78.0
681 Iteration calculate over
682
683
684
685
686 All item are in Bin and:
687 Bin area = 1080
688 Real_area = 236.0
689 Proportion_of_area= 0.21851851851851853
690 BEST_CHROM =
691 berth: [ 2. 2.5 2.5 17. 23. 7.5 16. 13.5 2.5 8. 3. 25.5 12.5 24.5
692 12. 8. 21.5 19.5]
693 time: [8. 7. 5. 0. 4. 8. 3. 6. 2. 0. 0. 7. 2. 2. 0. 2. 0. 4.]
694 num_QC: [4. 4. 3. 3. 3. 3. 2. 2. 2. 4. 4. 3. 3. 4. 4. 5. 2. 2.]
695 Objective function values and some other indicators:
696 Obj0 = 10.00      Obj1 = 68.00      Obj0 + Obj1 = 78.00
697 Total movement of crane: 8.00
698 Total waiting time in berth position: 60.00
699 Total index of q during berthing: 1170.00
700 Specific arrangement for each vessel:
701 V_id: 0          li: 4.0           xi: 2.0           bow of i: 0.0           tail of i: 4.0           gama_i0: 8.0           gama_i1: 9.0
702 load_i: 120.0    gama_i1 + 1: 10.0   gama_i1 - gama_i0: 1.0   duration_time_i: 2.0   demand_i: 120.0       work
703 V_id: 1          li: 5.0           xi: 2.5           bow of i: 0.0           tail of i: 5.0           gama_i0: 7.0           gama_i1: 7.0
704 load_i: 60.0     gama_i1 + 1: 8.0   gama_i1 - gama_i0: 0.0  duration_time_i: 1.0   demand_i: 60.0       work load_i:
705 V_id: 2          li: 5.0           xi: 2.5           bow of i: 0.0           tail of i: 5.0           gama_i0: 5.0           gama_i1: 6.0
706 load_i: 80.0     gama_i1 + 1: 7.0   gama_i1 - gama_i0: 1.0  duration_time_i: 2.0   demand_i: 80.0       work load_i:
707 V_id: 3          li: 6.0           xi: 17.0          bow of i: 14.0          tail of i: 20.0          gama_i0: 0.0           gama_i1: 2
708 load_i: 140.0    gama_i1 + 1: 3.0   gama_i1 - gama_i0: 2.0  duration_time_i: 3.0   demand_i: 140.0       work
709 V_id: 4          li: 4.0           xi: 23.0          bow of i: 21.0          tail of i: 25.0          gama_i0: 4.0           gama_i1: 6
710 load_i: 160.0    gama_i1 + 1: 7.0   gama_i1 - gama_i0: 2.0  duration_time_i: 3.0   demand_i: 160.0       work
711 V_id: 5          li: 7.0           xi: 7.5            bow of i: 4.0           tail of i: 11.0          gama_i0: 8.0           gama_i1: 10
712 load_i: 160.0    gama_i1 + 1: 11.0  gama_i1 - gama_i0: 2.0  duration_time_i: 3.0   demand_i: 160.0       work
713 V_id: 6          li: 4.0           xi: 16.0          bow of i: 14.0          tail of i: 18.0          gama_i0: 3.0           gama_i1: 5
714 load_i: 100.0    gama_i1 + 1: 6.0   gama_i1 - gama_i0: 2.0  duration_time_i: 3.0   demand_i: 100.0       work
715 V_id: 7          li: 5.0           xi: 13.5          bow of i: 11.0          tail of i: 16.0          gama_i0: 6.0           gama_i1: 9
716 load_i: 140.0    gama_i1 + 1: 10.0  gama_i1 - gama_i0: 3.0  duration_time_i: 4.0   demand_i: 140.0       work
717 V_id: 8          li: 5.0           xi: 2.5            bow of i: 0.0           tail of i: 5.0           gama_i0: 2.0           gama_i1: 4
718 load_i: 120.0    gama_i1 + 1: 5.0   gama_i1 - gama_i0: 2.0  duration_time_i: 3.0   demand_i: 120.0       work load_i:
719 V_id: 9          li: 4.0           xi: 8.0            bow of i: 6.0           tail of i: 10.0          gama_i0: 0.0           gama_i1: 1.0
720 load_i: 160.0    gama_i1 + 1: 2.0   gama_i1 - gama_i0: 1.0  duration_time_i: 2.0   demand_i: 160.0       work load_i:
721 V_id: 10         li: 6.0           xi: 3.0            bow of i: 0.0           tail of i: 6.0           gama_i0: 0.0           gama_i1: 1.0
722 load_i: 100.0    gama_i1 + 1: 2.0   gama_i1 - gama_i0: 1.0  duration_time_i: 2.0   demand_i: 100.0       work load_i:
723 V_id: 11         li: 9.0           xi: 25.5          bow of i: 21.0          tail of i: 30.0          gama_i0: 7.0           gama_i1: 1
724 load_i: 160.0    gama_i1 + 1: 10.0  gama_i1 - gama_i0: 2.0  duration_time_i: 3.0   demand_i: 160.0       work
725 V_id: 12         li: 3.0           xi: 12.5          bow of i: 11.0          tail of i: 14.0          gama_i0: 2.0           gama_i1: 1
726 load_i: 140.0    gama_i1 + 1: 5.0   gama_i1 - gama_i0: 2.0  duration_time_i: 3.0   demand_i: 140.0       work
727 V_id: 13         li: 9.0           xi: 24.5          bow of i: 20.0          tail of i: 29.0          gama_i0: 2.0           gama_i1: 1
728 load_i: 120.0    gama_i1 + 1: 4.0   gama_i1 - gama_i0: 1.0  duration_time_i: 2.0   demand_i: 120.0       work
729 V_id: 14         li: 4.0           xi: 12.0          bow of i: 10.0          tail of i: 14.0          gama_i0: 0.0           gama_i1: 1
730 load_i: 100.0    gama_i1 + 1: 2.0   gama_i1 - gama_i0: 1.0  duration_time_i: 2.0   demand_i: 100.0       work
731 V_id: 15         li: 6.0           xi: 8.0            bow of i: 5.0           tail of i: 11.0          gama_i0: 2.0           gama_i1: 3
732 load_i: 120.0    gama_i1 + 1: 4.0   gama_i1 - gama_i0: 1.0  duration_time_i: 2.0   demand_i: 120.0       work
733 V_id: 16         li: 3.0           xi: 21.5          bow of i: 20.0          tail of i: 23.0          gama_i0: 0.0           gama_i1: 1
734 load_i: 60.0     gama_i1 + 1: 2.0   gama_i1 - gama_i0: 1.0  duration_time_i: 2.0   demand_i: 60.0       work

```

unknown

718	V_id: 17	li: 3.0	xi: 19.5	bow of i: 18.0	tail of i: 21.0	gama_i0: 4.0	gama_i1
: 6.0	gama_i1 + 1: 7.0		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					

719

720 Algorithm finished and the total CPU time: 485 s

721 End

722