

unknown

```

80 cord_individual_obj[indivial_i,:] = [ 16. 10. 100. 110.]
81 cord_individual_obj[indivial_i,:] = [17. 9. 73. 82.]
82 cord_individual_obj[indivial_i,:] = [ 18. 10. 241. 251.]
83 cord_individual_obj[indivial_i,:] = [ 19. 11. 120. 131.]
84 cord_individual_obj[indivial_i,:] = [ 20. 10. 153. 163.]
85 cord_individual_obj[indivial_i,:] = [ 21. 10. 124. 134.]
86 cord_individual_obj[indivial_i,:] = [ 22. 10. 187. 197.]
87 cord_individual_obj[indivial_i,:] = [ 23. 10. 120. 130.]
88 cord_individual_obj[indivial_i,:] = [ 24. 7. 173. 180.]
89
90 min(cord_individual_obj[:,3]) = 82.0
91 historl_G_best_iter[iter, 3] = 82.0
92 Begin iteration:
93
94 iter = 2
95 cord_individual_obj[indivial_i,:] = [ 0. 9. 121. 130.]
96 cord_individual_obj[indivial_i,:] = [ 1. 10. 180. 190.]
97 cord_individual_obj[indivial_i,:] = [ 2. 11. 105. 116.]
98 cord_individual_obj[indivial_i,:] = [ 3. 9. 132. 141.]
99 cord_individual_obj[indivial_i,:] = [ 4. 10. 123. 133.]
100 cord_individual_obj[indivial_i,:] = [ 5. 9. 118. 127.]
101 cord_individual_obj[indivial_i,:] = [ 6. 11. 115. 126.]
102 cord_individual_obj[indivial_i,:] = [ 7. 10. 152. 162.]
103 cord_individual_obj[indivial_i,:] = [ 8. 9. 113. 122.]
104 cord_individual_obj[indivial_i,:] = [ 9. 10. 130. 140.]
105 cord_individual_obj[indivial_i,:] = [ 10. 10. 244. 254.]
106 cord_individual_obj[indivial_i,:] = [ 11. 10. 131. 141.]
107 cord_individual_obj[indivial_i,:] = [ 12. 11. 81. 92.]
108 cord_individual_obj[indivial_i,:] = [ 13. 9. 136. 145.]
109 cord_individual_obj[indivial_i,:] = [ 14. 11. 143. 154.]
110 cord_individual_obj[indivial_i,:] = [ 15. 10. 118. 128.]
111 cord_individual_obj[indivial_i,:] = [ 16. 11. 169. 180.]
112 cord_individual_obj[indivial_i,:] = [ 17. 10. 180. 190.]
113 cord_individual_obj[indivial_i,:] = [ 18. 9. 73. 82.]
114 cord_individual_obj[indivial_i,:] = [ 19. 10. 125. 135.]
115 cord_individual_obj[indivial_i,:] = [ 20. 9. 99. 108.]
116 cord_individual_obj[indivial_i,:] = [ 21. 9. 154. 163.]
117 cord_individual_obj[indivial_i,:] = [ 22. 12. 149. 161.]
118 cord_individual_obj[indivial_i,:] = [ 23. 9. 152. 161.]
119 cord_individual_obj[indivial_i,:] = [ 24. 9. 144. 153.]
120
121 min(cord_individual_obj[:,3]) = 82.0
122 historl_G_best_iter[iter, 3] = 82.0
123 Begin iteration:
124
125 iter = 3
126 cord_individual_obj[indivial_i,:] = [ 0. 9. 142. 151.]
127 cord_individual_obj[indivial_i,:] = [ 1. 10. 138. 148.]
128 cord_individual_obj[indivial_i,:] = [ 2. 10. 95. 105.]
129 cord_individual_obj[indivial_i,:] = [ 3. 10. 111. 121.]
130 cord_individual_obj[indivial_i,:] = [ 4. 9. 187. 196.]
131 cord_individual_obj[indivial_i,:] = [ 5. 11. 187. 198.]
132 cord_individual_obj[indivial_i,:] = [ 6. 9. 118. 127.]
133 cord_individual_obj[indivial_i,:] = [ 7. 8. 104. 112.]
134 cord_individual_obj[indivial_i,:] = [ 8. 8. 173. 181.]
135 cord_individual_obj[indivial_i,:] = [ 9. 9. 181. 190.]
136 cord_individual_obj[indivial_i,:] = [ 10. 9. 73. 82.]
137 cord_individual_obj[indivial_i,:] = [ 11. 11. 147. 158.]
138 cord_individual_obj[indivial_i,:] = [ 12. 10. 118. 128.]
139 cord_individual_obj[indivial_i,:] = [ 13. 8. 144. 152.]
140 cord_individual_obj[indivial_i,:] = [ 14. 9. 152. 161.]
141 cord_individual_obj[indivial_i,:] = [ 15. 9. 97. 106.]
142 cord_individual_obj[indivial_i,:] = [ 16. 11. 116. 127.]
143 cord_individual_obj[indivial_i,:] = [ 17. 12. 155. 167.]
144 cord_individual_obj[indivial_i,:] = [ 18. 10. 180. 190.]
145 cord_individual_obj[indivial_i,:] = [ 19. 14. 121. 135.]
146 cord_individual_obj[indivial_i,:] = [ 20. 10. 122. 132.]
147 cord_individual_obj[indivial_i,:] = [ 21. 9. 166. 175.]
148 cord_individual_obj[indivial_i,:] = [ 22. 11. 181. 192.]
149 cord_individual_obj[indivial_i,:] = [ 23. 10. 135. 145.]
150 cord_individual_obj[indivial_i,:] = [ 24. 9. 190. 199.]
151
152 min(cord_individual_obj[:,3]) = 82.0
153 historl_G_best_iter[iter, 3] = 82.0
154 Begin iteration:
155
156 iter = 4
157 cord_individual_obj[indivial_i,:] = [ 0. 10. 141. 151.]
158 cord_individual_obj[indivial_i,:] = [ 1. 9. 104. 113.]
159 cord_individual_obj[indivial_i,:] = [ 2. 8. 117. 125.]
160 cord_individual_obj[indivial_i,:] = [ 3. 10. 188. 198.]
161 cord_individual_obj[indivial_i,:] = [ 4. 9. 173. 182.]
162 cord_individual_obj[indivial_i,:] = [ 5. 11. 222. 233.]
163 cord_individual_obj[indivial_i,:] = [ 6. 10. 117. 127.]

```

```

164 cord_individual_obj[indivial_i,:] = [ 7. 9. 123. 132.]
165 cord_individual_obj[indivial_i,:] = [ 8. 10. 110. 120.]
166 cord_individual_obj[indivial_i,:] = [ 9. 11. 150. 161.]
167 cord_individual_obj[indivial_i,:] = [ 10. 10. 126. 136.]
168 cord_individual_obj[indivial_i,:] = [ 11. 9. 119. 128.]
169 cord_individual_obj[indivial_i,:] = [ 12. 9. 189. 198.]
170 cord_individual_obj[indivial_i,:] = [ 13. 11. 119. 130.]
171 cord_individual_obj[indivial_i,:] = [ 14. 8. 165. 173.]
172 cord_individual_obj[indivial_i,:] = [ 15. 9. 126. 135.]
173 cord_individual_obj[indivial_i,:] = [ 16. 8. 163. 171.]
174 cord_individual_obj[indivial_i,:] = [ 17. 10. 102. 112.]
175 cord_individual_obj[indivial_i,:] = [ 18. 8. 121. 129.]
176 cord_individual_obj[indivial_i,:] = [ 19. 10. 217. 227.]
177 cord_individual_obj[indivial_i,:] = [ 20. 9. 163. 172.]
178 cord_individual_obj[indivial_i,:] = [ 21. 10. 95. 105.]
179 cord_individual_obj[indivial_i,:] = [ 22. 10. 107. 117.]
180 cord_individual_obj[indivial_i,:] = [ 23. 11. 98. 109.]
181 cord_individual_obj[indivial_i,:] = [ 24. 9. 73. 82.]
182
183 min(cord_individual_obj[:,3]) = 82.0
184 historl_G_best_iter[iter,3] = 82.0
185 Begin iteration:
186
187 iter = 5
188 cord_individual_obj[indivial_i,:] = [ 0. 11. 117. 128.]
189 cord_individual_obj[indivial_i,:] = [ 1. 9. 96. 105.]
190 cord_individual_obj[indivial_i,:] = [ 2. 9. 79. 88.]
191 cord_individual_obj[indivial_i,:] = [ 3. 9. 145. 154.]
192 cord_individual_obj[indivial_i,:] = [ 4. 10. 131. 141.]
193 cord_individual_obj[indivial_i,:] = [ 5. 9. 73. 82.]
194 cord_individual_obj[indivial_i,:] = [ 6. 8. 111. 119.]
195 cord_individual_obj[indivial_i,:] = [ 7. 10. 116. 126.]
196 cord_individual_obj[indivial_i,:] = [ 8. 8. 113. 121.]
197 cord_individual_obj[indivial_i,:] = [ 9. 15. 165. 180.]
198 cord_individual_obj[indivial_i,:] = [ 10. 10. 94. 104.]
199 cord_individual_obj[indivial_i,:] = [ 11. 9. 105. 114.]
200 cord_individual_obj[indivial_i,:] = [ 12. 11. 97. 108.]
201 cord_individual_obj[indivial_i,:] = [ 13. 11. 133. 144.]
202 cord_individual_obj[indivial_i,:] = [ 14. 10. 96. 106.]
203 cord_individual_obj[indivial_i,:] = [ 15. 10. 138. 148.]
204 cord_individual_obj[indivial_i,:] = [ 16. 11. 187. 198.]
205 cord_individual_obj[indivial_i,:] = [ 17. 11. 165. 176.]
206 cord_individual_obj[indivial_i,:] = [ 18. 11. 233. 244.]
207 cord_individual_obj[indivial_i,:] = [ 19. 10. 112. 122.]
208 cord_individual_obj[indivial_i,:] = [ 20. 11. 167. 178.]
209 cord_individual_obj[indivial_i,:] = [ 21. 10. 165. 175.]
210 cord_individual_obj[indivial_i,:] = [ 22. 10. 121. 131.]
211 cord_individual_obj[indivial_i,:] = [ 23. 11. 120. 131.]
212 cord_individual_obj[indivial_i,:] = [ 24. 10. 198. 208.]
213
214 min(cord_individual_obj[:,3]) = 82.0
215 historl_G_best_iter[iter,3] = 82.0
216 Begin iteration:
217
218 iter = 6
219 cord_individual_obj[indivial_i,:] = [ 0. 9. 122. 131.]
220 cord_individual_obj[indivial_i,:] = [ 1. 9. 134. 143.]
221 cord_individual_obj[indivial_i,:] = [ 2. 9. 131. 140.]
222 cord_individual_obj[indivial_i,:] = [ 3. 10. 121. 131.]
223 cord_individual_obj[indivial_i,:] = [ 4. 11. 122. 133.]
224 cord_individual_obj[indivial_i,:] = [ 5. 12. 99. 111.]
225 cord_individual_obj[indivial_i,:] = [ 6. 12. 212. 224.]
226 cord_individual_obj[indivial_i,:] = [ 7. 10. 165. 175.]
227 cord_individual_obj[indivial_i,:] = [ 8. 10. 69. 79.]
228 cord_individual_obj[indivial_i,:] = [ 9. 10. 133. 143.]
229 cord_individual_obj[indivial_i,:] = [ 10. 9. 128. 137.]
230 cord_individual_obj[indivial_i,:] = [ 11. 10. 173. 183.]
231 cord_individual_obj[indivial_i,:] = [ 12. 9. 129. 138.]
232 cord_individual_obj[indivial_i,:] = [ 13. 10. 113. 123.]
233 cord_individual_obj[indivial_i,:] = [ 14. 8. 128. 136.]
234 cord_individual_obj[indivial_i,:] = [ 15. 9. 120. 129.]
235 cord_individual_obj[indivial_i,:] = [ 16. 9. 175. 184.]
236 cord_individual_obj[indivial_i,:] = [ 17. 9. 130. 139.]
237 cord_individual_obj[indivial_i,:] = [ 18. 9. 73. 82.]
238 cord_individual_obj[indivial_i,:] = [ 19. 11. 151. 162.]
239 cord_individual_obj[indivial_i,:] = [ 20. 9. 168. 177.]
240 cord_individual_obj[indivial_i,:] = [ 21. 10. 186. 196.]
241 cord_individual_obj[indivial_i,:] = [ 22. 9. 160. 169.]
242 cord_individual_obj[indivial_i,:] = [ 23. 9. 123. 132.]
243 cord_individual_obj[indivial_i,:] = [ 24. 11. 105. 116.]
244
245 min(cord_individual_obj[:,3]) = 79.0
246 historl_G_best_iter[iter,3] = 79.0
247 Begin iteration:

```

```

248
249 iter = 7
250 cord_individual_obj[indivial_i, :] = [ 0. 10. 215. 225.]
251 cord_individual_obj[indivial_i, :] = [ 1. 7. 140. 147.]
252 cord_individual_obj[indivial_i, :] = [ 2. 9. 108. 117.]
253 cord_individual_obj[indivial_i, :] = [ 3. 8. 175. 183.]
254 cord_individual_obj[indivial_i, :] = [ 4. 12. 147. 159.]
255 cord_individual_obj[indivial_i, :] = [ 5. 10. 102. 112.]
256 cord_individual_obj[indivial_i, :] = [ 6. 10. 69. 79.]
257 cord_individual_obj[indivial_i, :] = [ 7. 10. 146. 156.]
258 cord_individual_obj[indivial_i, :] = [ 8. 11. 172. 183.]
259 cord_individual_obj[indivial_i, :] = [ 9. 8. 203. 211.]
260 cord_individual_obj[indivial_i, :] = [ 10. 11. 178. 189.]
261 cord_individual_obj[indivial_i, :] = [ 11. 8. 102. 110.]
262 cord_individual_obj[indivial_i, :] = [ 12. 11. 224. 235.]
263 cord_individual_obj[indivial_i, :] = [ 13. 10. 87. 97.]
264 cord_individual_obj[indivial_i, :] = [ 14. 9. 69. 78.]
265 cord_individual_obj[indivial_i, :] = [ 15. 10. 115. 125.]
266 cord_individual_obj[indivial_i, :] = [ 16. 10. 133. 143.]
267 cord_individual_obj[indivial_i, :] = [ 17. 11. 146. 157.]
268 cord_individual_obj[indivial_i, :] = [ 18. 10. 104. 114.]
269 cord_individual_obj[indivial_i, :] = [ 19. 10. 129. 139.]
270 cord_individual_obj[indivial_i, :] = [ 20. 10. 89. 99.]
271 cord_individual_obj[indivial_i, :] = [ 21. 10. 155. 165.]
272 cord_individual_obj[indivial_i, :] = [ 22. 11. 176. 187.]
273 cord_individual_obj[indivial_i, :] = [ 23. 9. 137. 146.]
274 cord_individual_obj[indivial_i, :] = [ 24. 11. 103. 114.]
275

276 min(cord_individual_obj[:, 3]) = 78.0
277 historl_G_best_iter[iter, 3] = 78.0
278 Begin iteration:
279
280 iter = 8
281 cord_individual_obj[indivial_i, :] = [ 0. 9. 192. 201.]
282 cord_individual_obj[indivial_i, :] = [ 1. 10. 120. 130.]
283 cord_individual_obj[indivial_i, :] = [ 2. 9. 163. 172.]
284 cord_individual_obj[indivial_i, :] = [ 3. 9. 81. 90.]
285 cord_individual_obj[indivial_i, :] = [ 4. 9. 121. 130.]
286 cord_individual_obj[indivial_i, :] = [ 5. 10. 118. 128.]
287 cord_individual_obj[indivial_i, :] = [ 6. 8. 113. 121.]
288 cord_individual_obj[indivial_i, :] = [ 7. 9. 166. 175.]
289 cord_individual_obj[indivial_i, :] = [ 8. 9. 122. 131.]
290 cord_individual_obj[indivial_i, :] = [ 9. 11. 132. 143.]
291 cord_individual_obj[indivial_i, :] = [ 10. 9. 121. 130.]
292 cord_individual_obj[indivial_i, :] = [ 11. 9. 117. 126.]
293 cord_individual_obj[indivial_i, :] = [ 12. 9. 69. 78.]
294 cord_individual_obj[indivial_i, :] = [ 13. 9. 176. 185.]
295 cord_individual_obj[indivial_i, :] = [ 14. 9. 133. 142.]
296 cord_individual_obj[indivial_i, :] = [ 15. 10. 110. 120.]
297 cord_individual_obj[indivial_i, :] = [ 16. 10. 137. 147.]
298 cord_individual_obj[indivial_i, :] = [ 17. 10. 191. 201.]
299 cord_individual_obj[indivial_i, :] = [ 18. 10. 172. 182.]
300 cord_individual_obj[indivial_i, :] = [ 19. 10. 107. 117.]
301 cord_individual_obj[indivial_i, :] = [ 20. 9. 197. 206.]
302 cord_individual_obj[indivial_i, :] = [ 21. 9. 156. 165.]
303 cord_individual_obj[indivial_i, :] = [ 22. 11. 110. 121.]
304 cord_individual_obj[indivial_i, :] = [ 23. 11. 140. 151.]
305 cord_individual_obj[indivial_i, :] = [ 24. 11. 95. 106.]
306

307 min(cord_individual_obj[:, 3]) = 78.0
308 historl_G_best_iter[iter, 3] = 78.0
309 Begin iteration:
310
311 iter = 9
312 cord_individual_obj[indivial_i, :] = [ 0. 11. 85. 96.]
313 cord_individual_obj[indivial_i, :] = [ 1. 8. 169. 177.]
314 cord_individual_obj[indivial_i, :] = [ 2. 9. 151. 160.]
315 cord_individual_obj[indivial_i, :] = [ 3. 9. 142. 151.]
316 cord_individual_obj[indivial_i, :] = [ 4. 11. 131. 142.]
317 cord_individual_obj[indivial_i, :] = [ 5. 10. 143. 153.]
318 cord_individual_obj[indivial_i, :] = [ 6. 9. 101. 110.]
319 cord_individual_obj[indivial_i, :] = [ 7. 8. 121. 129.]
320 cord_individual_obj[indivial_i, :] = [ 8. 9. 168. 177.]
321 cord_individual_obj[indivial_i, :] = [ 9. 8. 103. 111.]
322 cord_individual_obj[indivial_i, :] = [ 10. 10. 108. 118.]
323 cord_individual_obj[indivial_i, :] = [ 11. 11. 141. 152.]
324 cord_individual_obj[indivial_i, :] = [ 12. 9. 97. 106.]
325 cord_individual_obj[indivial_i, :] = [ 13. 12. 113. 125.]
326 cord_individual_obj[indivial_i, :] = [ 14. 11. 154. 165.]
327 cord_individual_obj[indivial_i, :] = [ 15. 11. 177. 188.]
328 cord_individual_obj[indivial_i, :] = [ 16. 9. 116. 125.]
329 cord_individual_obj[indivial_i, :] = [ 17. 11. 115. 126.]
330 cord_individual_obj[indivial_i, :] = [ 18. 10. 102. 112.]
331 cord_individual_obj[indivial_i, :] = [ 19. 12. 137. 149.]

```

```

332 cord_individual_obj[indivial_i, :] = [20. 9. 69. 78.]
333 cord_individual_obj[indivial_i, :] = [21. 12. 188. 200.]
334 cord_individual_obj[indivial_i, :] = [22. 9. 147. 156.]
335 cord_individual_obj[indivial_i, :] = [23. 9. 143. 152.]
336 cord_individual_obj[indivial_i, :] = [24. 10. 104. 114.]
337
338 min(cord_individual_obj[:, 3]) = 78.0
339 histol_G_best_iter[iter, 3] = 78.0
340 Begin iteration:
341
342 iter = 10
343 cord_individual_obj[indivial_i, :] = [0. 9. 69. 78.]
344 cord_individual_obj[indivial_i, :] = [1. 10. 125. 135.]
345 cord_individual_obj[indivial_i, :] = [2. 9. 140. 149.]
346 cord_individual_obj[indivial_i, :] = [3. 8. 106. 114.]
347 cord_individual_obj[indivial_i, :] = [4. 9. 102. 111.]
348 cord_individual_obj[indivial_i, :] = [5. 8. 96. 104.]
349 cord_individual_obj[indivial_i, :] = [6. 9. 89. 98.]
350 cord_individual_obj[indivial_i, :] = [7. 9. 87. 96.]
351 cord_individual_obj[indivial_i, :] = [8. 8. 128. 136.]
352 cord_individual_obj[indivial_i, :] = [9. 10. 170. 180.]
353 cord_individual_obj[indivial_i, :] = [10. 9. 122. 131.]
354 cord_individual_obj[indivial_i, :] = [11. 9. 76. 85.]
355 cord_individual_obj[indivial_i, :] = [12. 9. 114. 123.]
356 cord_individual_obj[indivial_i, :] = [13. 8. 103. 111.]
357 cord_individual_obj[indivial_i, :] = [14. 9. 130. 139.]
358 cord_individual_obj[indivial_i, :] = [15. 10. 85. 95.]
359 cord_individual_obj[indivial_i, :] = [16. 10. 161. 171.]
360 cord_individual_obj[indivial_i, :] = [17. 11. 159. 170.]
361 cord_individual_obj[indivial_i, :] = [18. 10. 120. 130.]
362 cord_individual_obj[indivial_i, :] = [19. 9. 129. 138.]
363 cord_individual_obj[indivial_i, :] = [20. 11. 139. 150.]
364 cord_individual_obj[indivial_i, :] = [21. 9. 69. 78.]
365 cord_individual_obj[indivial_i, :] = [22. 11. 85. 96.]
366 cord_individual_obj[indivial_i, :] = [23. 10. 134. 144.]
367 cord_individual_obj[indivial_i, :] = [24. 10. 112. 122.]
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. 11. 159. 170.]
375 cord_individual_obj[indivial_i, :] = [1. 10. 201. 211.]
376 cord_individual_obj[indivial_i, :] = [2. 11. 108. 119.]
377 cord_individual_obj[indivial_i, :] = [3. 9. 97. 106.]
378 cord_individual_obj[indivial_i, :] = [4. 9. 123. 132.]
379 cord_individual_obj[indivial_i, :] = [5. 9. 174. 183.]
380 cord_individual_obj[indivial_i, :] = [6. 10. 89. 99.]
381 cord_individual_obj[indivial_i, :] = [7. 12. 162. 174.]
382 cord_individual_obj[indivial_i, :] = [8. 13. 108. 121.]
383 cord_individual_obj[indivial_i, :] = [9. 9. 69. 78.]
384 cord_individual_obj[indivial_i, :] = [10. 10. 123. 133.]
385 cord_individual_obj[indivial_i, :] = [11. 8. 85. 93.]
386 cord_individual_obj[indivial_i, :] = [12. 11. 172. 183.]
387 cord_individual_obj[indivial_i, :] = [13. 11. 128. 139.]
388 cord_individual_obj[indivial_i, :] = [14. 10. 117. 127.]
389 cord_individual_obj[indivial_i, :] = [15. 9. 128. 137.]
390 cord_individual_obj[indivial_i, :] = [16. 11. 113. 124.]
391 cord_individual_obj[indivial_i, :] = [17. 13. 119. 132.]
392 cord_individual_obj[indivial_i, :] = [18. 10. 119. 129.]
393 cord_individual_obj[indivial_i, :] = [19. 9. 127. 136.]
394 cord_individual_obj[indivial_i, :] = [20. 9. 161. 170.]
395 cord_individual_obj[indivial_i, :] = [21. 13. 119. 132.]
396 cord_individual_obj[indivial_i, :] = [22. 9. 78. 87.]
397 cord_individual_obj[indivial_i, :] = [23. 9. 151. 160.]
398 cord_individual_obj[indivial_i, :] = [24. 11. 152. 163.]
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. 9. 176. 185.]
406 cord_individual_obj[indivial_i, :] = [1. 9. 69. 78.]
407 cord_individual_obj[indivial_i, :] = [2. 11. 192. 203.]
408 cord_individual_obj[indivial_i, :] = [3. 10. 123. 133.]
409 cord_individual_obj[indivial_i, :] = [4. 10. 136. 146.]
410 cord_individual_obj[indivial_i, :] = [5. 7. 183. 190.]
411 cord_individual_obj[indivial_i, :] = [6. 10. 142. 152.]
412 cord_individual_obj[indivial_i, :] = [7. 12. 200. 212.]
413 cord_individual_obj[indivial_i, :] = [8. 11. 148. 159.]
414 cord_individual_obj[indivial_i, :] = [9. 9. 149. 158.]
415 cord_individual_obj[indivial_i, :] = [10. 12. 147. 159.]

```

```

416 cord_individual_obj[indivial_i,:] = [ 11. 10. 188. 198.]
417 cord_individual_obj[indivial_i,:] = [ 12. 12. 128. 140.]
418 cord_individual_obj[indivial_i,:] = [ 13. 11. 97. 108.]
419 cord_individual_obj[indivial_i,:] = [ 14. 10. 147. 157.]
420 cord_individual_obj[indivial_i,:] = [ 15. 9. 118. 127.]
421 cord_individual_obj[indivial_i,:] = [ 16. 11. 131. 142.]
422 cord_individual_obj[indivial_i,:] = [ 17. 11. 226. 237.]
423 cord_individual_obj[indivial_i,:] = [ 18. 11. 151. 162.]
424 cord_individual_obj[indivial_i,:] = [ 19. 12. 100. 112.]
425 cord_individual_obj[indivial_i,:] = [ 20. 9. 125. 134.]
426 cord_individual_obj[indivial_i,:] = [ 21. 13. 217. 230.]
427 cord_individual_obj[indivial_i,:] = [ 22. 8. 120. 128.]
428 cord_individual_obj[indivial_i,:] = [ 23. 8. 105. 113.]
429 cord_individual_obj[indivial_i,:] = [ 24. 9. 133. 142.]
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. 122. 131.]
437 cord_individual_obj[indivial_i,:] = [ 1. 12. 214. 226.]
438 cord_individual_obj[indivial_i,:] = [ 2. 10. 169. 179.]
439 cord_individual_obj[indivial_i,:] = [ 3. 8. 172. 180.]
440 cord_individual_obj[indivial_i,:] = [ 4. 9. 136. 145.]
441 cord_individual_obj[indivial_i,:] = [ 5. 8. 161. 169.]
442 cord_individual_obj[indivial_i,:] = [ 6. 12. 133. 145.]
443 cord_individual_obj[indivial_i,:] = [ 7. 9. 130. 139.]
444 cord_individual_obj[indivial_i,:] = [ 8. 8. 127. 135.]
445 cord_individual_obj[indivial_i,:] = [ 9. 9. 153. 162.]
446 cord_individual_obj[indivial_i,:] = [ 10. 8. 168. 176.]
447 cord_individual_obj[indivial_i,:] = [ 11. 12. 131. 143.]
448 cord_individual_obj[indivial_i,:] = [ 12. 13. 156. 169.]
449 cord_individual_obj[indivial_i,:] = [ 13. 11. 138. 149.]
450 cord_individual_obj[indivial_i,:] = [ 14. 11. 159. 170.]
451 cord_individual_obj[indivial_i,:] = [ 15. 9. 145. 154.]
452 cord_individual_obj[indivial_i,:] = [ 16. 11. 130. 141.]
453 cord_individual_obj[indivial_i,:] = [ 17. 9. 69. 78.]
454 cord_individual_obj[indivial_i,:] = [ 18. 9. 141. 150.]
455 cord_individual_obj[indivial_i,:] = [ 19. 10. 155. 165.]
456 cord_individual_obj[indivial_i,:] = [ 20. 10. 135. 145.]
457 cord_individual_obj[indivial_i,:] = [ 21. 12. 162. 174.]
458 cord_individual_obj[indivial_i,:] = [ 22. 8. 133. 141.]
459 cord_individual_obj[indivial_i,:] = [ 23. 11. 108. 119.]
460 cord_individual_obj[indivial_i,:] = [ 24. 9. 147. 156.]
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. 10. 152. 162.]
468 cord_individual_obj[indivial_i,:] = [ 1. 9. 69. 78.]
469 cord_individual_obj[indivial_i,:] = [ 2. 9. 104. 113.]
470 cord_individual_obj[indivial_i,:] = [ 3. 7. 164. 171.]
471 cord_individual_obj[indivial_i,:] = [ 4. 11. 180. 191.]
472 cord_individual_obj[indivial_i,:] = [ 5. 8. 168. 176.]
473 cord_individual_obj[indivial_i,:] = [ 6. 8. 139. 147.]
474 cord_individual_obj[indivial_i,:] = [ 7. 8. 122. 130.]
475 cord_individual_obj[indivial_i,:] = [ 8. 10. 139. 149.]
476 cord_individual_obj[indivial_i,:] = [ 9. 10. 114. 124.]
477 cord_individual_obj[indivial_i,:] = [ 10. 10. 149. 159.]
478 cord_individual_obj[indivial_i,:] = [ 11. 11. 157. 168.]
479 cord_individual_obj[indivial_i,:] = [ 12. 9. 114. 123.]
480 cord_individual_obj[indivial_i,:] = [ 13. 11. 98. 109.]
481 cord_individual_obj[indivial_i,:] = [ 14. 11. 135. 146.]
482 cord_individual_obj[indivial_i,:] = [ 15. 9. 96. 105.]
483 cord_individual_obj[indivial_i,:] = [ 16. 10. 101. 111.]
484 cord_individual_obj[indivial_i,:] = [ 17. 10. 106. 116.]
485 cord_individual_obj[indivial_i,:] = [ 18. 10. 136. 146.]
486 cord_individual_obj[indivial_i,:] = [ 19. 10. 137. 147.]
487 cord_individual_obj[indivial_i,:] = [ 20. 10. 92. 102.]
488 cord_individual_obj[indivial_i,:] = [ 21. 11. 145. 156.]
489 cord_individual_obj[indivial_i,:] = [ 22. 14. 137. 151.]
490 cord_individual_obj[indivial_i,:] = [ 23. 10. 169. 179.]
491 cord_individual_obj[indivial_i,:] = [ 24. 10. 114. 124.]
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. 12. 177. 189.]
499 cord_individual_obj[indivial_i,:] = [ 1. 12. 214. 226.]

```

```

500 cord_individual_obj[indivial_i,:] = [ 2. 10. 139. 149.]
501 cord_individual_obj[indivial_i,:] = [ 3. 10. 151. 161.]
502 cord_individual_obj[indivial_i,:] = [ 4. 9. 69. 78.]
503 cord_individual_obj[indivial_i,:] = [ 5. 10. 158. 168.]
504 cord_individual_obj[indivial_i,:] = [ 6. 10. 97. 107.]
505 cord_individual_obj[indivial_i,:] = [ 7. 10. 162. 172.]
506 cord_individual_obj[indivial_i,:] = [ 8. 9. 90. 99.]
507 cord_individual_obj[indivial_i,:] = [ 9. 10. 206. 216.]
508 cord_individual_obj[indivial_i,:] = [ 10. 9. 158. 167.]
509 cord_individual_obj[indivial_i,:] = [ 11. 11. 109. 120.]
510 cord_individual_obj[indivial_i,:] = [ 12. 9. 137. 146.]
511 cord_individual_obj[indivial_i,:] = [ 13. 10. 142. 152.]
512 cord_individual_obj[indivial_i,:] = [ 14. 9. 239. 248.]
513 cord_individual_obj[indivial_i,:] = [ 15. 10. 202. 212.]
514 cord_individual_obj[indivial_i,:] = [ 16. 12. 125. 137.]
515 cord_individual_obj[indivial_i,:] = [ 17. 10. 128. 138.]
516 cord_individual_obj[indivial_i,:] = [ 18. 10. 169. 179.]
517 cord_individual_obj[indivial_i,:] = [ 19. 11. 170. 181.]
518 cord_individual_obj[indivial_i,:] = [ 20. 11. 171. 182.]
519 cord_individual_obj[indivial_i,:] = [ 21. 9. 139. 148.]
520 cord_individual_obj[indivial_i,:] = [ 22. 10. 117. 127.]
521 cord_individual_obj[indivial_i,:] = [ 23. 11. 146. 157.]
522 cord_individual_obj[indivial_i,:] = [ 24. 8. 134. 142.]
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. 10. 221. 231.]
530 cord_individual_obj[indivial_i,:] = [ 1. 11. 101. 112.]
531 cord_individual_obj[indivial_i,:] = [ 2. 12. 183. 195.]
532 cord_individual_obj[indivial_i,:] = [ 3. 8. 100. 108.]
533 cord_individual_obj[indivial_i,:] = [ 4. 12. 182. 194.]
534 cord_individual_obj[indivial_i,:] = [ 5. 9. 122. 131.]
535 cord_individual_obj[indivial_i,:] = [ 6. 8. 165. 173.]
536 cord_individual_obj[indivial_i,:] = [ 7. 11. 162. 173.]
537 cord_individual_obj[indivial_i,:] = [ 8. 11. 121. 132.]
538 cord_individual_obj[indivial_i,:] = [ 9. 10. 155. 165.]
539 cord_individual_obj[indivial_i,:] = [ 10. 9. 167. 176.]
540 cord_individual_obj[indivial_i,:] = [ 11. 10. 178. 188.]
541 cord_individual_obj[indivial_i,:] = [ 12. 10. 197. 207.]
542 cord_individual_obj[indivial_i,:] = [ 13. 9. 138. 147.]
543 cord_individual_obj[indivial_i,:] = [ 14. 9. 69. 78.]
544 cord_individual_obj[indivial_i,:] = [ 15. 9. 94. 103.]
545 cord_individual_obj[indivial_i,:] = [ 16. 12. 101. 113.]
546 cord_individual_obj[indivial_i,:] = [ 17. 11. 252. 263.]
547 cord_individual_obj[indivial_i,:] = [ 18. 10. 132. 142.]
548 cord_individual_obj[indivial_i,:] = [ 19. 11. 133. 144.]
549 cord_individual_obj[indivial_i,:] = [ 20. 10. 190. 200.]
550 cord_individual_obj[indivial_i,:] = [ 21. 9. 133. 142.]
551 cord_individual_obj[indivial_i,:] = [ 22. 9. 89. 98.]
552 cord_individual_obj[indivial_i,:] = [ 23. 8. 134. 142.]
553 cord_individual_obj[indivial_i,:] = [ 24. 13. 190. 203.]
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. 9. 140. 149.]
561 cord_individual_obj[indivial_i,:] = [ 1. 10. 238. 248.]
562 cord_individual_obj[indivial_i,:] = [ 2. 10. 101. 111.]
563 cord_individual_obj[indivial_i,:] = [ 3. 10. 176. 186.]
564 cord_individual_obj[indivial_i,:] = [ 4. 11. 195. 206.]
565 cord_individual_obj[indivial_i,:] = [ 5. 9. 144. 153.]
566 cord_individual_obj[indivial_i,:] = [ 6. 12. 94. 106.]
567 cord_individual_obj[indivial_i,:] = [ 7. 11. 140. 151.]
568 cord_individual_obj[indivial_i,:] = [ 8. 14. 135. 149.]
569 cord_individual_obj[indivial_i,:] = [ 9. 9. 125. 134.]
570 cord_individual_obj[indivial_i,:] = [ 10. 9. 179. 188.]
571 cord_individual_obj[indivial_i,:] = [ 11. 11. 105. 116.]
572 cord_individual_obj[indivial_i,:] = [ 12. 12. 105. 117.]
573 cord_individual_obj[indivial_i,:] = [ 13. 12. 161. 173.]
574 cord_individual_obj[indivial_i,:] = [ 14. 9. 125. 134.]
575 cord_individual_obj[indivial_i,:] = [ 15. 9. 99. 108.]
576 cord_individual_obj[indivial_i,:] = [ 16. 10. 111. 121.]
577 cord_individual_obj[indivial_i,:] = [ 17. 9. 69. 78.]
578 cord_individual_obj[indivial_i,:] = [ 18. 9. 81. 90.]
579 cord_individual_obj[indivial_i,:] = [ 19. 9. 160. 169.]
580 cord_individual_obj[indivial_i,:] = [ 20. 9. 135. 144.]
581 cord_individual_obj[indivial_i,:] = [ 21. 13. 103. 116.]
582 cord_individual_obj[indivial_i,:] = [ 22. 10. 103. 113.]
583 cord_individual_obj[indivial_i,:] = [ 23. 9. 105. 114.]

```

```

584     cord_individual_obj[indivial_i, :] = [ 24.  9. 178. 187.]
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.  9. 135. 144.]
592     cord_individual_obj[indivial_i, :] = [ 1.  9. 69. 78.]
593     cord_individual_obj[indivial_i, :] = [ 2.  9. 130. 139.]
594     cord_individual_obj[indivial_i, :] = [ 3.  9. 161. 170.]
595     cord_individual_obj[indivial_i, :] = [ 4.  8. 151. 159.]
596     cord_individual_obj[indivial_i, :] = [ 5.  8. 180. 188.]
597     cord_individual_obj[indivial_i, :] = [ 6.  9. 177. 186.]
598     cord_individual_obj[indivial_i, :] = [ 7.  8. 217. 225.]
599     cord_individual_obj[indivial_i, :] = [ 8.  11. 113. 124.]
600     cord_individual_obj[indivial_i, :] = [ 9.  9. 154. 163.]
601     cord_individual_obj[indivial_i, :] = [ 10. 9. 111. 120.]
602     cord_individual_obj[indivial_i, :] = [ 11. 12. 132. 144.]
603     cord_individual_obj[indivial_i, :] = [ 12. 10. 149. 159.]
604     cord_individual_obj[indivial_i, :] = [ 13. 10. 133. 143.]
605     cord_individual_obj[indivial_i, :] = [ 14. 8. 188. 196.]
606     cord_individual_obj[indivial_i, :] = [ 15. 10. 170. 180.]
607     cord_individual_obj[indivial_i, :] = [ 16. 12. 119. 131.]
608     cord_individual_obj[indivial_i, :] = [ 17. 11. 108. 119.]
609     cord_individual_obj[indivial_i, :] = [ 18. 10. 150. 160.]
610     cord_individual_obj[indivial_i, :] = [ 19. 9. 204. 213.]
611     cord_individual_obj[indivial_i, :] = [ 20. 11. 135. 146.]
612     cord_individual_obj[indivial_i, :] = [ 21. 11. 131. 142.]
613     cord_individual_obj[indivial_i, :] = [ 22. 10. 107. 117.]
614     cord_individual_obj[indivial_i, :] = [ 23. 11. 164. 175.]
615     cord_individual_obj[indivial_i, :] = [ 24. 11. 147. 158.]
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. 191. 200.]
623     cord_individual_obj[indivial_i, :] = [ 1. 12. 203. 215.]
624     cord_individual_obj[indivial_i, :] = [ 2. 10. 103. 113.]
625     cord_individual_obj[indivial_i, :] = [ 3. 8. 130. 138.]
626     cord_individual_obj[indivial_i, :] = [ 4. 9. 140. 149.]
627     cord_individual_obj[indivial_i, :] = [ 5. 9. 168. 177.]
628     cord_individual_obj[indivial_i, :] = [ 6. 10. 156. 166.]
629     cord_individual_obj[indivial_i, :] = [ 7. 9. 69. 78.]
630     cord_individual_obj[indivial_i, :] = [ 8. 10. 165. 175.]
631     cord_individual_obj[indivial_i, :] = [ 9. 10. 148. 158.]
632     cord_individual_obj[indivial_i, :] = [ 10. 9. 184. 193.]
633     cord_individual_obj[indivial_i, :] = [ 11. 10. 153. 163.]
634     cord_individual_obj[indivial_i, :] = [ 12. 9. 85. 94.]
635     cord_individual_obj[indivial_i, :] = [ 13. 10. 157. 167.]
636     cord_individual_obj[indivial_i, :] = [ 14. 9. 106. 115.]
637     cord_individual_obj[indivial_i, :] = [ 15. 10. 207. 217.]
638     cord_individual_obj[indivial_i, :] = [ 16. 10. 106. 116.]
639     cord_individual_obj[indivial_i, :] = [ 17. 10. 148. 158.]
640     cord_individual_obj[indivial_i, :] = [ 18. 10. 132. 142.]
641     cord_individual_obj[indivial_i, :] = [ 19. 10. 163. 173.]
642     cord_individual_obj[indivial_i, :] = [ 20. 11. 116. 127.]
643     cord_individual_obj[indivial_i, :] = [ 21. 11. 102. 113.]
644     cord_individual_obj[indivial_i, :] = [ 22. 11. 162. 173.]
645     cord_individual_obj[indivial_i, :] = [ 23. 10. 119. 129.]
646     cord_individual_obj[indivial_i, :] = [ 24. 11. 173. 184.]
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.  8. 108. 116.]
654     cord_individual_obj[indivial_i, :] = [ 1. 12. 203. 215.]
655     cord_individual_obj[indivial_i, :] = [ 2. 9. 133. 142.]
656     cord_individual_obj[indivial_i, :] = [ 3. 10. 113. 123.]
657     cord_individual_obj[indivial_i, :] = [ 4. 9. 115. 124.]
658     cord_individual_obj[indivial_i, :] = [ 5. 8. 148. 156.]
659     cord_individual_obj[indivial_i, :] = [ 6. 11. 144. 155.]
660     cord_individual_obj[indivial_i, :] = [ 7. 10. 141. 151.]
661     cord_individual_obj[indivial_i, :] = [ 8. 14. 161. 175.]
662     cord_individual_obj[indivial_i, :] = [ 9. 10. 123. 133.]
663     cord_individual_obj[indivial_i, :] = [ 10. 10. 158. 168.]
664     cord_individual_obj[indivial_i, :] = [ 11. 9. 85. 94.]
665     cord_individual_obj[indivial_i, :] = [ 12. 11. 154. 165.]
666     cord_individual_obj[indivial_i, :] = [ 13. 10. 99. 109.]
667     cord_individual_obj[indivial_i, :] = [ 14. 10. 149. 159.]

```

```

668 cord_individual_obj[indivial_i,:] = [15. 9. 69. 78.]
669 cord_individual_obj[indivial_i,:] = [16. 11. 117. 128.]
670 cord_individual_obj[indivial_i,:] = [17. 9. 128. 137.]
671 cord_individual_obj[indivial_i,:] = [18. 10. 88. 98.]
672 cord_individual_obj[indivial_i,:] = [19. 9. 168. 177.]
673 cord_individual_obj[indivial_i,:] = [20. 10. 140. 150.]
674 cord_individual_obj[indivial_i,:] = [21. 11. 144. 155.]
675 cord_individual_obj[indivial_i,:] = [22. 10. 140. 150.]
676 cord_individual_obj[indivial_i,:] = [23. 11. 181. 192.]
677 cord_individual_obj[indivial_i,:] = [24. 10. 198. 208.]
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 = 244.0
689 Proportion_of_area = 0.22592592592592592
690 BEST_CHROM =
691 berth: [11. 6. 17.5 23. 25.5 2.5 18.5 23.5 23.5 17.5 14.5 3.5 11. 10.5
692 6.5 7. 2.5 2.]
693 time: [6. 0. 6. 7. 0. 4. 2. 5. 3. 0. 2. 6. 0. 2. 2. 4. 8. 0.]
694 num_QC: [3. 4. 5. 4. 2. 3. 2. 4. 4. 4. 3. 3. 5. 3. 3. 3. 5. 2.]
695 Objective function values and some other indicators:
696 Obj0 = 9.00          Obj1 = 69.00          Obj0 + Obj1 = 78.00
697 Total movement of crane: 12.00
698 Total waiting time in berth position: 57.00
699 Total index of q during berthing: 1205.00
700 Specific arrangement for each vessel:
701 V_id: 0      li: 8.0           xi: 11.0           bow of i: 7.0           tail of i: 15.0           gama_i0: 6.0           gama_i1: 7
702 .0          gama_i1 + 1: 8.0       gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 120.0           work
703 load_i: 120.0           work load gap_i: 0
704 V_id: 1      li: 4.0           xi: 6.0           bow of i: 4.0           tail of i: 8.0           gama_i0: 0.0           gama_i1: 1.0
705 .0          gama_i1 + 1: 2.0       gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 120.0           work load_i:
706 load_i: 120.0           work load gap_i: 0
707 V_id: 2      li: 5.0           xi: 17.5           bow of i: 15.0           tail of i: 20.0           gama_i0: 6.0           gama_i1: 7
708 .0          gama_i1 + 1: 8.0       gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 160.0           work
709 load_i: 160.0           work load gap_i: 0
710 V_id: 3      li: 6.0           xi: 23.0           bow of i: 20.0           tail of i: 26.0           gama_i0: 7.0           gama_i1: 8
711 .0          gama_i1 + 1: 9.0       gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 120.0           work
712 load_i: 120.0           work load gap_i: 0
713 V_id: 4      li: 9.0           xi: 25.5           bow of i: 21.0           tail of i: 30.0           gama_i0: 0.0           gama_i1: 2
714 .0          gama_i1 + 1: 3.0       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: 5.0           xi: 2.5            bow of i: 0.0           tail of i: 5.0           gama_i0: 4.0           gama_i1: 5
717 .0          gama_i1 + 1: 6.0       gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 100.0           work load_i:
718 load_i: 100.0           work load gap_i: 0
719 V_id: 6      li: 3.0           xi: 18.5           bow of i: 17.0           tail of i: 20.0           gama_i0: 2.0           gama_i1: 5
720 .0          gama_i1 + 1: 6.0       gama_i1 - gama_i0: 3.0           duration_time_i: 4.0           demand_i: 160.0           work
721 load_i: 160.0           work load gap_i: 0
722 V_id: 7      li: 7.0           xi: 23.5           bow of i: 20.0           tail of i: 27.0           gama_i0: 5.0           gama_i1: 6
723 .0          gama_i1 + 1: 7.0       gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 100.0           work
724 load_i: 100.0           work load gap_i: 0
725 V_id: 8      li: 7.0           xi: 23.5           bow of i: 20.0           tail of i: 27.0           gama_i0: 3.0           gama_i1: 4
726 .0          gama_i1 + 1: 5.0       gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 100.0           work
727 load_i: 100.0           work load gap_i: 0
728 V_id: 9      li: 7.0           xi: 17.5           bow of i: 14.0           tail of i: 21.0           gama_i0: 0.0           gama_i1: 1
729 .0          gama_i1 + 1: 2.0       gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 160.0           work
730 load_i: 160.0           work load gap_i: 0
731 V_id: 10     li: 5.0           xi: 14.5           bow of i: 12.0           tail of i: 17.0           gama_i0: 2.0           gama_i1: 1
732 .0          gama_i1 + 1: 4.0       gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 120.0           work
733 load_i: 120.0           work load gap_i: 0
734 V_id: 11     li: 7.0           xi: 3.5            bow of i: 0.0           tail of i: 7.0           gama_i0: 6.0           gama_i1: 7
735 .0          gama_i1 + 1: 8.0       gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 80.0           work load_i:
736 load_i: 80.0           work load gap_i: 0
737 V_id: 12     li: 6.0           xi: 11.0           bow of i: 8.0           tail of i: 14.0           gama_i0: 0.0           gama_i1: 1
738 .0          gama_i1 + 1: 2.0       gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 120.0           work
739 load_i: 120.0           work load gap_i: 0
740 V_id: 13     li: 3.0           xi: 10.5           bow of i: 9.0           tail of i: 12.0           gama_i0: 2.0           gama_i1: 1
741 .0          gama_i1 + 1: 4.0       gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 120.0           work
742 load_i: 120.0           work load gap_i: 0
743 V_id: 14     li: 5.0           xi: 6.5            bow of i: 4.0           tail of i: 9.0           gama_i0: 2.0           gama_i1: 3
744 .0          gama_i1 + 1: 4.0       gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 80.0           work load_i:
745 load_i: 80.0           work load gap_i: 0
746 V_id: 15     li: 4.0           xi: 7.0            bow of i: 5.0           tail of i: 9.0           gama_i0: 4.0           gama_i1: 5
747 .0          gama_i1 + 1: 6.0       gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 120.0           work load_i:
748 load_i: 120.0           work load gap_i: 0
749 V_id: 16     li: 5.0           xi: 2.5            bow of i: 0.0           tail of i: 5.0           gama_i0: 8.0           gama_i1: 9
750 .0          gama_i1 + 1: 10.0      gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 140.0           work
751 load_i: 140.0           work load gap_i: 0

```

unknown

718 V_id: 17 li: 4.0 xi: 2.0 bow of i: 0.0 tail of i: 4.0 gama_i0: 0.0 gama_i1: 3.0
160.0 gama_i1 + 1: 4.0 gama_i1 - gama_i0: 3.0 duration_time_i: 4.0 demand_i: 160.0 work load_i:
719

720 Algorithm finished and the total CPU time: 496 s

721 End

722