

unknown

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80 cord_individual_obj[indivial_i,:] = [ 16. 9. 105. 114.]
81 cord_individual_obj[indivial_i,:] = [ 17. 9. 215. 224.]
82 cord_individual_obj[indivial_i,:] = [ 18. 10. 160. 170.]
83 cord_individual_obj[indivial_i,:] = [ 19. 9. 168. 177.]
84 cord_individual_obj[indivial_i,:] = [ 20. 9. 119. 128.]
85 cord_individual_obj[indivial_i,:] = [ 21. 10. 166. 176.]
86 cord_individual_obj[indivial_i,:] = [ 22. 9. 136. 145.]
87 cord_individual_obj[indivial_i,:] = [ 23. 8. 190. 198.]
88 cord_individual_obj[indivial_i,:] = [ 24. 9. 181. 190.]
89
90 min(cord_individual_obj[:,3]) = 95.0
91 historl_G_best_iter[iter, 3] = 95.0
92 Begin iteration:
93
94 iter = 2
95 cord_individual_obj[indivial_i,:] = [ 0. 11. 182. 193.]
96 cord_individual_obj[indivial_i,:] = [ 1. 9. 127. 136.]
97 cord_individual_obj[indivial_i,:] = [ 2. 10. 180. 190.]
98 cord_individual_obj[indivial_i,:] = [ 3. 11. 133. 144.]
99 cord_individual_obj[indivial_i,:] = [ 4. 8. 131. 139.]
100 cord_individual_obj[indivial_i,:] = [ 5. 8. 141. 149.]
101 cord_individual_obj[indivial_i,:] = [ 6. 8. 145. 153.]
102 cord_individual_obj[indivial_i,:] = [ 7. 9. 190. 199.]
103 cord_individual_obj[indivial_i,:] = [ 8. 9. 106. 115.]
104 cord_individual_obj[indivial_i,:] = [ 9. 9. 171. 180.]
105 cord_individual_obj[indivial_i,:] = [ 10. 9. 97. 106.]
106 cord_individual_obj[indivial_i,:] = [ 11. 8. 141. 149.]
107 cord_individual_obj[indivial_i,:] = [ 12. 11. 158. 169.]
108 cord_individual_obj[indivial_i,:] = [ 13. 9. 123. 132.]
109 cord_individual_obj[indivial_i,:] = [ 14. 9. 140. 149.]
110 cord_individual_obj[indivial_i,:] = [ 15. 7. 107. 114.]
111 cord_individual_obj[indivial_i,:] = [ 16. 8. 151. 159.]
112 cord_individual_obj[indivial_i,:] = [ 17. 11. 84. 95.]
113 cord_individual_obj[indivial_i,:] = [ 18. 10. 118. 128.]
114 cord_individual_obj[indivial_i,:] = [ 19. 9. 122. 131.]
115 cord_individual_obj[indivial_i,:] = [ 20. 8. 158. 166.]
116 cord_individual_obj[indivial_i,:] = [ 21. 9. 123. 132.]
117 cord_individual_obj[indivial_i,:] = [ 22. 10. 173. 183.]
118 cord_individual_obj[indivial_i,:] = [ 23. 8. 136. 144.]
119 cord_individual_obj[indivial_i,:] = [ 24. 9. 166. 175.]
120
121 min(cord_individual_obj[:,3]) = 95.0
122 historl_G_best_iter[iter, 3] = 95.0
123 Begin iteration:
124
125 iter = 3
126 cord_individual_obj[indivial_i,:] = [ 0. 9. 170. 179.]
127 cord_individual_obj[indivial_i,:] = [ 1. 9. 188. 197.]
128 cord_individual_obj[indivial_i,:] = [ 2. 9. 111. 120.]
129 cord_individual_obj[indivial_i,:] = [ 3. 10. 106. 116.]
130 cord_individual_obj[indivial_i,:] = [ 4. 12. 138. 150.]
131 cord_individual_obj[indivial_i,:] = [ 5. 10. 144. 154.]
132 cord_individual_obj[indivial_i,:] = [ 6. 8. 123. 131.]
133 cord_individual_obj[indivial_i,:] = [ 7. 11. 84. 95.]
134 cord_individual_obj[indivial_i,:] = [ 8. 9. 97. 106.]
135 cord_individual_obj[indivial_i,:] = [ 9. 9. 134. 143.]
136 cord_individual_obj[indivial_i,:] = [ 10. 8. 108. 116.]
137 cord_individual_obj[indivial_i,:] = [ 11. 11. 107. 118.]
138 cord_individual_obj[indivial_i,:] = [ 12. 8. 155. 163.]
139 cord_individual_obj[indivial_i,:] = [ 13. 9. 105. 114.]
140 cord_individual_obj[indivial_i,:] = [ 14. 11. 116. 127.]
141 cord_individual_obj[indivial_i,:] = [ 15. 9. 149. 158.]
142 cord_individual_obj[indivial_i,:] = [ 16. 10. 186. 196.]
143 cord_individual_obj[indivial_i,:] = [ 17. 9. 154. 163.]
144 cord_individual_obj[indivial_i,:] = [ 18. 11. 115. 126.]
145 cord_individual_obj[indivial_i,:] = [ 19. 9. 145. 154.]
146 cord_individual_obj[indivial_i,:] = [ 20. 9. 140. 149.]
147 cord_individual_obj[indivial_i,:] = [ 21. 9. 129. 138.]
148 cord_individual_obj[indivial_i,:] = [ 22. 8. 113. 121.]
149 cord_individual_obj[indivial_i,:] = [ 23. 9. 128. 137.]
150 cord_individual_obj[indivial_i,:] = [ 24. 10. 139. 149.]
151
152 min(cord_individual_obj[:,3]) = 95.0
153 historl_G_best_iter[iter, 3] = 95.0
154 Begin iteration:
155
156 iter = 4
157 cord_individual_obj[indivial_i,:] = [ 0. 12. 196. 208.]
158 cord_individual_obj[indivial_i,:] = [ 1. 11. 84. 95.]
159 cord_individual_obj[indivial_i,:] = [ 2. 8. 187. 195.]
160 cord_individual_obj[indivial_i,:] = [ 3. 12. 152. 164.]
161 cord_individual_obj[indivial_i,:] = [ 4. 11. 116. 127.]
162 cord_individual_obj[indivial_i,:] = [ 5. 7. 129. 136.]
163 cord_individual_obj[indivial_i,:] = [ 6. 10. 132. 142.]

```

```

164 cord_individual_obj[indivial_i, :] = [ 7. 9. 170. 179.]
165 cord_individual_obj[indivial_i, :] = [ 8. 8. 118. 126.]
166 cord_individual_obj[indivial_i, :] = [ 9. 7. 144. 151.]
167 cord_individual_obj[indivial_i, :] = [ 10. 10. 108. 118.]
168 cord_individual_obj[indivial_i, :] = [ 11. 8. 163. 171.]
169 cord_individual_obj[indivial_i, :] = [ 12. 9. 91. 100.]
170 cord_individual_obj[indivial_i, :] = [ 13. 8. 152. 160.]
171 cord_individual_obj[indivial_i, :] = [ 14. 11. 133. 144.]
172 cord_individual_obj[indivial_i, :] = [ 15. 8. 134. 142.]
173 cord_individual_obj[indivial_i, :] = [ 16. 10. 124. 134.]
174 cord_individual_obj[indivial_i, :] = [ 17. 10. 182. 192.]
175 cord_individual_obj[indivial_i, :] = [ 18. 10. 165. 175.]
176 cord_individual_obj[indivial_i, :] = [ 19. 11. 126. 137.]
177 cord_individual_obj[indivial_i, :] = [ 20. 10. 173. 183.]
178 cord_individual_obj[indivial_i, :] = [ 21. 9. 150. 159.]
179 cord_individual_obj[indivial_i, :] = [ 22. 11. 158. 169.]
180 cord_individual_obj[indivial_i, :] = [ 23. 9. 199. 208.]
181 cord_individual_obj[indivial_i, :] = [ 24. 10. 150. 160.]
182
183 min(cord_individual_obj[:, 3]) = 95.0
184 historl_G_best_iter[iter, 3] = 95.0
185 Begin iteration:
186
187 iter = 5
188 cord_individual_obj[indivial_i, :] = [ 0. 11. 84. 95.]
189 cord_individual_obj[indivial_i, :] = [ 1. 8. 97. 105.]
190 cord_individual_obj[indivial_i, :] = [ 2. 8. 150. 158.]
191 cord_individual_obj[indivial_i, :] = [ 3. 7. 150. 157.]
192 cord_individual_obj[indivial_i, :] = [ 4. 8. 161. 169.]
193 cord_individual_obj[indivial_i, :] = [ 5. 10. 117. 127.]
194 cord_individual_obj[indivial_i, :] = [ 6. 10. 114. 124.]
195 cord_individual_obj[indivial_i, :] = [ 7. 9. 128. 137.]
196 cord_individual_obj[indivial_i, :] = [ 8. 9. 90. 99.]
197 cord_individual_obj[indivial_i, :] = [ 9. 8. 187. 195.]
198 cord_individual_obj[indivial_i, :] = [ 10. 9. 110. 119.]
199 cord_individual_obj[indivial_i, :] = [ 11. 8. 145. 153.]
200 cord_individual_obj[indivial_i, :] = [ 12. 9. 133. 142.]
201 cord_individual_obj[indivial_i, :] = [ 13. 9. 117. 126.]
202 cord_individual_obj[indivial_i, :] = [ 14. 9. 140. 149.]
203 cord_individual_obj[indivial_i, :] = [ 15. 9. 161. 170.]
204 cord_individual_obj[indivial_i, :] = [ 16. 10. 164. 174.]
205 cord_individual_obj[indivial_i, :] = [ 17. 9. 154. 163.]
206 cord_individual_obj[indivial_i, :] = [ 18. 10. 149. 159.]
207 cord_individual_obj[indivial_i, :] = [ 19. 11. 131. 142.]
208 cord_individual_obj[indivial_i, :] = [ 20. 9. 152. 161.]
209 cord_individual_obj[indivial_i, :] = [ 21. 9. 227. 236.]
210 cord_individual_obj[indivial_i, :] = [ 22. 9. 121. 130.]
211 cord_individual_obj[indivial_i, :] = [ 23. 9. 194. 203.]
212 cord_individual_obj[indivial_i, :] = [ 24. 9. 143. 152.]
213
214 min(cord_individual_obj[:, 3]) = 95.0
215 historl_G_best_iter[iter, 3] = 95.0
216 Begin iteration:
217
218 iter = 6
219 cord_individual_obj[indivial_i, :] = [ 0. 8. 126. 134.]
220 cord_individual_obj[indivial_i, :] = [ 1. 8. 217. 225.]
221 cord_individual_obj[indivial_i, :] = [ 2. 9. 181. 190.]
222 cord_individual_obj[indivial_i, :] = [ 3. 9. 127. 136.]
223 cord_individual_obj[indivial_i, :] = [ 4. 9. 100. 109.]
224 cord_individual_obj[indivial_i, :] = [ 5. 8. 123. 131.]
225 cord_individual_obj[indivial_i, :] = [ 6. 11. 120. 131.]
226 cord_individual_obj[indivial_i, :] = [ 7. 9. 127. 136.]
227 cord_individual_obj[indivial_i, :] = [ 8. 9. 120. 129.]
228 cord_individual_obj[indivial_i, :] = [ 9. 8. 195. 203.]
229 cord_individual_obj[indivial_i, :] = [ 10. 9. 122. 131.]
230 cord_individual_obj[indivial_i, :] = [ 11. 9. 117. 126.]
231 cord_individual_obj[indivial_i, :] = [ 12. 8. 157. 165.]
232 cord_individual_obj[indivial_i, :] = [ 13. 9. 84. 93.]
233 cord_individual_obj[indivial_i, :] = [ 14. 12. 141. 153.]
234 cord_individual_obj[indivial_i, :] = [ 15. 10. 134. 144.]
235 cord_individual_obj[indivial_i, :] = [ 16. 9. 140. 149.]
236 cord_individual_obj[indivial_i, :] = [ 17. 8. 223. 231.]
237 cord_individual_obj[indivial_i, :] = [ 18. 9. 110. 119.]
238 cord_individual_obj[indivial_i, :] = [ 19. 9. 149. 158.]
239 cord_individual_obj[indivial_i, :] = [ 20. 10. 123. 133.]
240 cord_individual_obj[indivial_i, :] = [ 21. 11. 84. 95.]
241 cord_individual_obj[indivial_i, :] = [ 22. 8. 143. 151.]
242 cord_individual_obj[indivial_i, :] = [ 23. 7. 181. 188.]
243 cord_individual_obj[indivial_i, :] = [ 24. 9. 131. 140.]
244
245 min(cord_individual_obj[:, 3]) = 93.0
246 historl_G_best_iter[iter, 3] = 93.0
247 Begin iteration:

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248
249 iter = 7
250 cord_individual_obj[indivial_i, :] = [ 0. 11. 217. 228.]
251 cord_individual_obj[indivial_i, :] = [ 1. 9. 96. 105.]
252 cord_individual_obj[indivial_i, :] = [ 2. 9. 88. 97.]
253 cord_individual_obj[indivial_i, :] = [ 3. 8. 153. 161.]
254 cord_individual_obj[indivial_i, :] = [ 4. 9. 96. 105.]
255 cord_individual_obj[indivial_i, :] = [ 5. 9. 130. 139.]
256 cord_individual_obj[indivial_i, :] = [ 6. 8. 103. 111.]
257 cord_individual_obj[indivial_i, :] = [ 7. 9. 121. 130.]
258 cord_individual_obj[indivial_i, :] = [ 8. 10. 128. 138.]
259 cord_individual_obj[indivial_i, :] = [ 9. 8. 122. 130.]
260 cord_individual_obj[indivial_i, :] = [ 10. 9. 91. 100.]
261 cord_individual_obj[indivial_i, :] = [ 11. 10. 147. 157.]
262 cord_individual_obj[indivial_i, :] = [ 12. 9. 223. 232.]
263 cord_individual_obj[indivial_i, :] = [ 13. 9. 129. 138.]
264 cord_individual_obj[indivial_i, :] = [ 14. 10. 168. 178.]
265 cord_individual_obj[indivial_i, :] = [ 15. 8. 140. 148.]
266 cord_individual_obj[indivial_i, :] = [ 16. 10. 177. 187.]
267 cord_individual_obj[indivial_i, :] = [ 17. 9. 84. 93.]
268 cord_individual_obj[indivial_i, :] = [ 18. 10. 115. 125.]
269 cord_individual_obj[indivial_i, :] = [ 19. 9. 114. 123.]
270 cord_individual_obj[indivial_i, :] = [ 20. 8. 145. 153.]
271 cord_individual_obj[indivial_i, :] = [ 21. 10. 165. 175.]
272 cord_individual_obj[indivial_i, :] = [ 22. 9. 92. 101.]
273 cord_individual_obj[indivial_i, :] = [ 23. 9. 130. 139.]
274 cord_individual_obj[indivial_i, :] = [ 24. 8. 203. 211.]
275

276 min(cord_individual_obj[:, 3]) = 93.0
277 historl_G_best_iter[iter, 3] = 93.0
278 Begin iteration:
279
280 iter = 8
281 cord_individual_obj[indivial_i, :] = [ 0. 9. 118. 127.]
282 cord_individual_obj[indivial_i, :] = [ 1. 11. 130. 141.]
283 cord_individual_obj[indivial_i, :] = [ 2. 8. 142. 150.]
284 cord_individual_obj[indivial_i, :] = [ 3. 7. 150. 157.]
285 cord_individual_obj[indivial_i, :] = [ 4. 9. 153. 162.]
286 cord_individual_obj[indivial_i, :] = [ 5. 8. 100. 108.]
287 cord_individual_obj[indivial_i, :] = [ 6. 9. 177. 186.]
288 cord_individual_obj[indivial_i, :] = [ 7. 10. 60. 70.]
289 cord_individual_obj[indivial_i, :] = [ 8. 10. 119. 129.]
290 cord_individual_obj[indivial_i, :] = [ 9. 9. 121. 130.]
291 cord_individual_obj[indivial_i, :] = [ 10. 9. 169. 178.]
292 cord_individual_obj[indivial_i, :] = [ 11. 11. 152. 163.]
293 cord_individual_obj[indivial_i, :] = [ 12. 9. 84. 93.]
294 cord_individual_obj[indivial_i, :] = [ 13. 9. 98. 107.]
295 cord_individual_obj[indivial_i, :] = [ 14. 12. 141. 153.]
296 cord_individual_obj[indivial_i, :] = [ 15. 9. 159. 168.]
297 cord_individual_obj[indivial_i, :] = [ 16. 11. 148. 159.]
298 cord_individual_obj[indivial_i, :] = [ 17. 9. 93. 102.]
299 cord_individual_obj[indivial_i, :] = [ 18. 9. 157. 166.]
300 cord_individual_obj[indivial_i, :] = [ 19. 8. 125. 133.]
301 cord_individual_obj[indivial_i, :] = [ 20. 9. 122. 131.]
302 cord_individual_obj[indivial_i, :] = [ 21. 11. 116. 127.]
303 cord_individual_obj[indivial_i, :] = [ 22. 9. 150. 159.]
304 cord_individual_obj[indivial_i, :] = [ 23. 10. 146. 156.]
305 cord_individual_obj[indivial_i, :] = [ 24. 10. 122. 132.]
306

307 min(cord_individual_obj[:, 3]) = 70.0
308 historl_G_best_iter[iter, 3] = 70.0
309 Begin iteration:
310
311 iter = 9
312 cord_individual_obj[indivial_i, :] = [ 0. 9. 121. 130.]
313 cord_individual_obj[indivial_i, :] = [ 1. 9. 187. 196.]
314 cord_individual_obj[indivial_i, :] = [ 2. 10. 158. 168.]
315 cord_individual_obj[indivial_i, :] = [ 3. 8. 155. 163.]
316 cord_individual_obj[indivial_i, :] = [ 4. 10. 122. 132.]
317 cord_individual_obj[indivial_i, :] = [ 5. 9. 106. 115.]
318 cord_individual_obj[indivial_i, :] = [ 6. 10. 60. 70.]
319 cord_individual_obj[indivial_i, :] = [ 7. 10. 105. 115.]
320 cord_individual_obj[indivial_i, :] = [ 8. 9. 116. 125.]
321 cord_individual_obj[indivial_i, :] = [ 9. 11. 144. 155.]
322 cord_individual_obj[indivial_i, :] = [ 10. 9. 120. 129.]
323 cord_individual_obj[indivial_i, :] = [ 11. 11. 178. 189.]
324 cord_individual_obj[indivial_i, :] = [ 12. 9. 155. 164.]
325 cord_individual_obj[indivial_i, :] = [ 13. 9. 149. 158.]
326 cord_individual_obj[indivial_i, :] = [ 14. 10. 95. 105.]
327 cord_individual_obj[indivial_i, :] = [ 15. 9. 173. 182.]
328 cord_individual_obj[indivial_i, :] = [ 16. 9. 86. 95.]
329 cord_individual_obj[indivial_i, :] = [ 17. 10. 140. 150.]
330 cord_individual_obj[indivial_i, :] = [ 18. 9. 131. 140.]
331 cord_individual_obj[indivial_i, :] = [ 19. 8. 111. 119.]

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unknown

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332     cord_individual_obj[indivial_i,:] = [ 20.  9. 113. 122.]
333     cord_individual_obj[indivial_i,:] = [ 21. 12. 175. 187.]
334     cord_individual_obj[indivial_i,:] = [ 22.  8. 79. 87.]
335     cord_individual_obj[indivial_i,:] = [ 23. 11. 101. 112.]
336     cord_individual_obj[indivial_i,:] = [ 24. 10. 128. 138.]
337
338 min(cord_individual_obj[:,3]) = 70.0
339 histol_G_best_iter[iter,3] = 70.0
340 Begin iteration:
341
342 iter = 10
343     cord_individual_obj[indivial_i,:] = [ 0.  8. 95. 103.]
344     cord_individual_obj[indivial_i,:] = [ 1. 10. 60. 70.]
345     cord_individual_obj[indivial_i,:] = [ 2. 11. 118. 129.]
346     cord_individual_obj[indivial_i,:] = [ 3. 9. 123. 132.]
347     cord_individual_obj[indivial_i,:] = [ 4. 10. 168. 178.]
348     cord_individual_obj[indivial_i,:] = [ 5. 11. 125. 136.]
349     cord_individual_obj[indivial_i,:] = [ 6. 8. 176. 184.]
350     cord_individual_obj[indivial_i,:] = [ 7. 10. 118. 128.]
351     cord_individual_obj[indivial_i,:] = [ 8. 10. 138. 148.]
352     cord_individual_obj[indivial_i,:] = [ 9. 8. 130. 138.]
353     cord_individual_obj[indivial_i,:] = [ 10. 11. 153. 164.]
354     cord_individual_obj[indivial_i,:] = [ 11. 9. 177. 186.]
355     cord_individual_obj[indivial_i,:] = [ 12. 9. 196. 205.]
356     cord_individual_obj[indivial_i,:] = [ 13. 9. 124. 133.]
357     cord_individual_obj[indivial_i,:] = [ 14. 10. 146. 156.]
358     cord_individual_obj[indivial_i,:] = [ 15. 9. 170. 179.]
359     cord_individual_obj[indivial_i,:] = [ 16. 12. 138. 150.]
360     cord_individual_obj[indivial_i,:] = [ 17. 9. 164. 173.]
361     cord_individual_obj[indivial_i,:] = [ 18. 9. 154. 163.]
362     cord_individual_obj[indivial_i,:] = [ 19. 9. 134. 143.]
363     cord_individual_obj[indivial_i,:] = [ 20. 10. 100. 110.]
364     cord_individual_obj[indivial_i,:] = [ 21. 7. 135. 142.]
365     cord_individual_obj[indivial_i,:] = [ 22. 8. 85. 93.]
366     cord_individual_obj[indivial_i,:] = [ 23. 10. 168. 178.]
367     cord_individual_obj[indivial_i,:] = [ 24. 11. 143. 154.]
368
369 min(cord_individual_obj[:,3]) = 70.0
370 histol_G_best_iter[iter,3] = 70.0
371 Begin iteration:
372
373 iter = 11
374     cord_individual_obj[indivial_i,:] = [ 0. 10. 135. 145.]
375     cord_individual_obj[indivial_i,:] = [ 1. 8. 148. 156.]
376     cord_individual_obj[indivial_i,:] = [ 2. 8. 151. 159.]
377     cord_individual_obj[indivial_i,:] = [ 3. 11. 179. 190.]
378     cord_individual_obj[indivial_i,:] = [ 4. 8. 210. 218.]
379     cord_individual_obj[indivial_i,:] = [ 5. 10. 197. 207.]
380     cord_individual_obj[indivial_i,:] = [ 6. 10. 126. 136.]
381     cord_individual_obj[indivial_i,:] = [ 7. 9. 105. 114.]
382     cord_individual_obj[indivial_i,:] = [ 8. 7. 136. 143.]
383     cord_individual_obj[indivial_i,:] = [ 9. 10. 126. 136.]
384     cord_individual_obj[indivial_i,:] = [ 10. 10. 110. 120.]
385     cord_individual_obj[indivial_i,:] = [ 11. 9. 126. 135.]
386     cord_individual_obj[indivial_i,:] = [ 12. 10. 60. 70.]
387     cord_individual_obj[indivial_i,:] = [ 13. 11. 125. 136.]
388     cord_individual_obj[indivial_i,:] = [ 14. 10. 159. 169.]
389     cord_individual_obj[indivial_i,:] = [ 15. 9. 122. 131.]
390     cord_individual_obj[indivial_i,:] = [ 16. 8. 164. 172.]
391     cord_individual_obj[indivial_i,:] = [ 17. 10. 116. 126.]
392     cord_individual_obj[indivial_i,:] = [ 18. 12. 130. 142.]
393     cord_individual_obj[indivial_i,:] = [ 19. 10. 104. 114.]
394     cord_individual_obj[indivial_i,:] = [ 20. 9. 157. 166.]
395     cord_individual_obj[indivial_i,:] = [ 21. 10. 115. 125.]
396     cord_individual_obj[indivial_i,:] = [ 22. 10. 155. 165.]
397     cord_individual_obj[indivial_i,:] = [ 23. 9. 98. 107.]
398     cord_individual_obj[indivial_i,:] = [ 24. 10. 82. 92.]
399
400 min(cord_individual_obj[:,3]) = 70.0
401 histol_G_best_iter[iter,3] = 70.0
402 Begin iteration:
403
404 iter = 12
405     cord_individual_obj[indivial_i,:] = [ 0. 11. 163. 174.]
406     cord_individual_obj[indivial_i,:] = [ 1. 11. 121. 132.]
407     cord_individual_obj[indivial_i,:] = [ 2. 8. 184. 192.]
408     cord_individual_obj[indivial_i,:] = [ 3. 10. 193. 203.]
409     cord_individual_obj[indivial_i,:] = [ 4. 10. 60. 70.]
410     cord_individual_obj[indivial_i,:] = [ 5. 9. 158. 167.]
411     cord_individual_obj[indivial_i,:] = [ 6. 8. 133. 141.]
412     cord_individual_obj[indivial_i,:] = [ 7. 8. 109. 117.]
413     cord_individual_obj[indivial_i,:] = [ 8. 10. 125. 135.]
414     cord_individual_obj[indivial_i,:] = [ 9. 10. 126. 136.]
415     cord_individual_obj[indivial_i,:] = [ 10. 10. 159. 169.]
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416 cord_individual_obj[indivial_i,:] = [ 11. 8. 106. 114.]
417 cord_individual_obj[indivial_i,:] = [ 12. 13. 125. 138.]
418 cord_individual_obj[indivial_i,:] = [ 13. 11. 117. 128.]
419 cord_individual_obj[indivial_i,:] = [ 14. 13. 149. 162.]
420 cord_individual_obj[indivial_i,:] = [ 15. 7. 122. 129.]
421 cord_individual_obj[indivial_i,:] = [ 16. 9. 135. 144.]
422 cord_individual_obj[indivial_i,:] = [ 17. 10. 111. 121.]
423 cord_individual_obj[indivial_i,:] = [ 18. 10. 185. 195.]
424 cord_individual_obj[indivial_i,:] = [ 19. 8. 158. 166.]
425 cord_individual_obj[indivial_i,:] = [ 20. 9. 106. 115.]
426 cord_individual_obj[indivial_i,:] = [ 21. 11. 144. 155.]
427 cord_individual_obj[indivial_i,:] = [ 22. 8. 149. 157.]
428 cord_individual_obj[indivial_i,:] = [ 23. 11. 109. 120.]
429 cord_individual_obj[indivial_i,:] = [ 24. 8. 101. 109.]
430
431 min(cord_individual_obj[:,3]) = 70.0
432 histol_G_best_iter[iter,3] = 70.0
433 Begin iteration:
434
435 iter = 13
436 cord_individual_obj[indivial_i,:] = [ 0. 9. 132. 141.]
437 cord_individual_obj[indivial_i,:] = [ 1. 10. 212. 222.]
438 cord_individual_obj[indivial_i,:] = [ 2. 8. 192. 200.]
439 cord_individual_obj[indivial_i,:] = [ 3. 10. 60. 70.]
440 cord_individual_obj[indivial_i,:] = [ 4. 13. 169. 182.]
441 cord_individual_obj[indivial_i,:] = [ 5. 9. 143. 152.]
442 cord_individual_obj[indivial_i,:] = [ 6. 10. 121. 131.]
443 cord_individual_obj[indivial_i,:] = [ 7. 9. 101. 110.]
444 cord_individual_obj[indivial_i,:] = [ 8. 11. 220. 231.]
445 cord_individual_obj[indivial_i,:] = [ 9. 8. 136. 144.]
446 cord_individual_obj[indivial_i,:] = [ 10. 9. 92. 101.]
447 cord_individual_obj[indivial_i,:] = [ 11. 10. 152. 162.]
448 cord_individual_obj[indivial_i,:] = [ 12. 14. 146. 160.]
449 cord_individual_obj[indivial_i,:] = [ 13. 11. 137. 148.]
450 cord_individual_obj[indivial_i,:] = [ 14. 11. 175. 186.]
451 cord_individual_obj[indivial_i,:] = [ 15. 9. 150. 159.]
452 cord_individual_obj[indivial_i,:] = [ 16. 10. 134. 144.]
453 cord_individual_obj[indivial_i,:] = [ 17. 9. 154. 163.]
454 cord_individual_obj[indivial_i,:] = [ 18. 12. 156. 168.]
455 cord_individual_obj[indivial_i,:] = [ 19. 11. 185. 196.]
456 cord_individual_obj[indivial_i,:] = [ 20. 8. 207. 215.]
457 cord_individual_obj[indivial_i,:] = [ 21. 13. 159. 172.]
458 cord_individual_obj[indivial_i,:] = [ 22. 8. 171. 179.]
459 cord_individual_obj[indivial_i,:] = [ 23. 10. 104. 114.]
460 cord_individual_obj[indivial_i,:] = [ 24. 11. 151. 162.]
461
462 min(cord_individual_obj[:,3]) = 70.0
463 histol_G_best_iter[iter,3] = 70.0
464 Begin iteration:
465
466 iter = 14
467 cord_individual_obj[indivial_i,:] = [ 0. 8. 91. 99.]
468 cord_individual_obj[indivial_i,:] = [ 1. 11. 107. 118.]
469 cord_individual_obj[indivial_i,:] = [ 2. 9. 150. 159.]
470 cord_individual_obj[indivial_i,:] = [ 3. 9. 146. 155.]
471 cord_individual_obj[indivial_i,:] = [ 4. 12. 151. 163.]
472 cord_individual_obj[indivial_i,:] = [ 5. 8. 127. 135.]
473 cord_individual_obj[indivial_i,:] = [ 6. 10. 138. 148.]
474 cord_individual_obj[indivial_i,:] = [ 7. 11. 182. 193.]
475 cord_individual_obj[indivial_i,:] = [ 8. 10. 60. 70.]
476 cord_individual_obj[indivial_i,:] = [ 9. 8. 134. 142.]
477 cord_individual_obj[indivial_i,:] = [ 10. 8. 110. 118.]
478 cord_individual_obj[indivial_i,:] = [ 11. 10. 120. 130.]
479 cord_individual_obj[indivial_i,:] = [ 12. 8. 110. 118.]
480 cord_individual_obj[indivial_i,:] = [ 13. 10. 151. 161.]
481 cord_individual_obj[indivial_i,:] = [ 14. 9. 113. 122.]
482 cord_individual_obj[indivial_i,:] = [ 15. 9. 125. 134.]
483 cord_individual_obj[indivial_i,:] = [ 16. 11. 121. 132.]
484 cord_individual_obj[indivial_i,:] = [ 17. 11. 171. 182.]
485 cord_individual_obj[indivial_i,:] = [ 18. 9. 157. 166.]
486 cord_individual_obj[indivial_i,:] = [ 19. 8. 158. 166.]
487 cord_individual_obj[indivial_i,:] = [ 20. 9. 82. 91.]
488 cord_individual_obj[indivial_i,:] = [ 21. 10. 190. 200.]
489 cord_individual_obj[indivial_i,:] = [ 22. 9. 128. 137.]
490 cord_individual_obj[indivial_i,:] = [ 23. 10. 138. 148.]
491 cord_individual_obj[indivial_i,:] = [ 24. 10. 160. 170.]
492
493 min(cord_individual_obj[:,3]) = 70.0
494 histol_G_best_iter[iter,3] = 70.0
495 Begin iteration:
496
497 iter = 15
498 cord_individual_obj[indivial_i,:] = [ 0. 8. 131. 139.]
499 cord_individual_obj[indivial_i,:] = [ 1. 10. 127. 137.]

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500 cord_individual_obj[indivial_i, :] = [ 2. 9. 142. 151.]
501 cord_individual_obj[indivial_i, :] = [ 3. 11. 89. 100.]
502 cord_individual_obj[indivial_i, :] = [ 4. 10. 155. 165.]
503 cord_individual_obj[indivial_i, :] = [ 5. 8. 136. 144.]
504 cord_individual_obj[indivial_i, :] = [ 6. 8. 132. 140.]
505 cord_individual_obj[indivial_i, :] = [ 7. 10. 107. 117.]
506 cord_individual_obj[indivial_i, :] = [ 8. 11. 196. 207.]
507 cord_individual_obj[indivial_i, :] = [ 9. 11. 132. 143.]
508 cord_individual_obj[indivial_i, :] = [ 10. 10. 118. 128.]
509 cord_individual_obj[indivial_i, :] = [ 11. 8. 211. 219.]
510 cord_individual_obj[indivial_i, :] = [ 12. 9. 95. 104.]
511 cord_individual_obj[indivial_i, :] = [ 13. 9. 134. 143.]
512 cord_individual_obj[indivial_i, :] = [ 14. 10. 185. 195.]
513 cord_individual_obj[indivial_i, :] = [ 15. 7. 108. 115.]
514 cord_individual_obj[indivial_i, :] = [ 16. 9. 91. 100.]
515 cord_individual_obj[indivial_i, :] = [ 17. 10. 144. 154.]
516 cord_individual_obj[indivial_i, :] = [ 18. 10. 121. 131.]
517 cord_individual_obj[indivial_i, :] = [ 19. 9. 251. 260.]
518 cord_individual_obj[indivial_i, :] = [ 20. 10. 165. 175.]
519 cord_individual_obj[indivial_i, :] = [ 21. 10. 60. 70.]
520 cord_individual_obj[indivial_i, :] = [ 22. 8. 122. 130.]
521 cord_individual_obj[indivial_i, :] = [ 23. 10. 96. 106.]
522 cord_individual_obj[indivial_i, :] = [ 24. 10. 123. 133.]
523
524 min(cord_individual_obj[:, 3]) = 70.0
525 histol_G_best_iter[iter, 3] = 70.0
526 Begin iteration:
527
528 iter = 16
529 cord_individual_obj[indivial_i, :] = [ 0. 9. 83. 92.]
530 cord_individual_obj[indivial_i, :] = [ 1. 10. 156. 166.]
531 cord_individual_obj[indivial_i, :] = [ 2. 11. 124. 135.]
532 cord_individual_obj[indivial_i, :] = [ 3. 9. 129. 138.]
533 cord_individual_obj[indivial_i, :] = [ 4. 9. 172. 181.]
534 cord_individual_obj[indivial_i, :] = [ 5. 10. 217. 227.]
535 cord_individual_obj[indivial_i, :] = [ 6. 8. 136. 144.]
536 cord_individual_obj[indivial_i, :] = [ 7. 8. 111. 119.]
537 cord_individual_obj[indivial_i, :] = [ 8. 11. 175. 186.]
538 cord_individual_obj[indivial_i, :] = [ 9. 8. 136. 144.]
539 cord_individual_obj[indivial_i, :] = [ 10. 12. 193. 205.]
540 cord_individual_obj[indivial_i, :] = [ 11. 11. 136. 147.]
541 cord_individual_obj[indivial_i, :] = [ 12. 8. 122. 130.]
542 cord_individual_obj[indivial_i, :] = [ 13. 9. 150. 159.]
543 cord_individual_obj[indivial_i, :] = [ 14. 10. 121. 131.]
544 cord_individual_obj[indivial_i, :] = [ 15. 8. 140. 148.]
545 cord_individual_obj[indivial_i, :] = [ 16. 12. 165. 177.]
546 cord_individual_obj[indivial_i, :] = [ 17. 9. 96. 105.]
547 cord_individual_obj[indivial_i, :] = [ 18. 10. 116. 126.]
548 cord_individual_obj[indivial_i, :] = [ 19. 10. 60. 70.]
549 cord_individual_obj[indivial_i, :] = [ 20. 11. 188. 199.]
550 cord_individual_obj[indivial_i, :] = [ 21. 10. 150. 160.]
551 cord_individual_obj[indivial_i, :] = [ 22. 11. 151. 162.]
552 cord_individual_obj[indivial_i, :] = [ 23. 7. 168. 175.]
553 cord_individual_obj[indivial_i, :] = [ 24. 9. 195. 204.]
554
555 min(cord_individual_obj[:, 3]) = 70.0
556 histol_G_best_iter[iter, 3] = 70.0
557 Begin iteration:
558
559 iter = 17
560 cord_individual_obj[indivial_i, :] = [ 0. 11. 166. 177.]
561 cord_individual_obj[indivial_i, :] = [ 1. 9. 107. 116.]
562 cord_individual_obj[indivial_i, :] = [ 2. 10. 175. 185.]
563 cord_individual_obj[indivial_i, :] = [ 3. 11. 113. 124.]
564 cord_individual_obj[indivial_i, :] = [ 4. 12. 117. 129.]
565 cord_individual_obj[indivial_i, :] = [ 5. 10. 60. 70.]
566 cord_individual_obj[indivial_i, :] = [ 6. 9. 111. 120.]
567 cord_individual_obj[indivial_i, :] = [ 7. 10. 93. 103.]
568 cord_individual_obj[indivial_i, :] = [ 8. 11. 153. 164.]
569 cord_individual_obj[indivial_i, :] = [ 9. 9. 103. 112.]
570 cord_individual_obj[indivial_i, :] = [ 10. 9. 168. 177.]
571 cord_individual_obj[indivial_i, :] = [ 11. 9. 156. 165.]
572 cord_individual_obj[indivial_i, :] = [ 12. 8. 143. 151.]
573 cord_individual_obj[indivial_i, :] = [ 13. 9. 106. 115.]
574 cord_individual_obj[indivial_i, :] = [ 14. 10. 209. 219.]
575 cord_individual_obj[indivial_i, :] = [ 15. 7. 135. 142.]
576 cord_individual_obj[indivial_i, :] = [ 16. 13. 142. 155.]
577 cord_individual_obj[indivial_i, :] = [ 17. 9. 166. 175.]
578 cord_individual_obj[indivial_i, :] = [ 18. 11. 111. 122.]
579 cord_individual_obj[indivial_i, :] = [ 19. 8. 132. 140.]
580 cord_individual_obj[indivial_i, :] = [ 20. 10. 252. 262.]
581 cord_individual_obj[indivial_i, :] = [ 21. 8. 142. 150.]
582 cord_individual_obj[indivial_i, :] = [ 22. 10. 168. 178.]
583 cord_individual_obj[indivial_i, :] = [ 23. 9. 101. 110.]

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584     cord_individual_obj[indivial_i, :] = [ 24. 10. 140. 150.]
585
586     min(cord_individual_obj[:, 3]) = 70.0
587     historl_G_best_iter[iter, 3] = 70.0
588 Begin iteration:
589
590 iter = 18
591     cord_individual_obj[indivial_i, :] = [ 0. 11. 150. 161.]
592     cord_individual_obj[indivial_i, :] = [ 1. 10. 112. 122.]
593     cord_individual_obj[indivial_i, :] = [ 2. 9. 121. 130.]
594     cord_individual_obj[indivial_i, :] = [ 3. 9. 186. 195.]
595     cord_individual_obj[indivial_i, :] = [ 4. 10. 144. 154.]
596     cord_individual_obj[indivial_i, :] = [ 5. 10. 153. 163.]
597     cord_individual_obj[indivial_i, :] = [ 6. 9. 113. 122.]
598     cord_individual_obj[indivial_i, :] = [ 7. 10. 86. 96.]
599     cord_individual_obj[indivial_i, :] = [ 8. 11. 139. 150.]
600     cord_individual_obj[indivial_i, :] = [ 9. 9. 101. 110.]
601     cord_individual_obj[indivial_i, :] = [ 10. 11. 92. 103.]
602     cord_individual_obj[indivial_i, :] = [ 11. 9. 113. 122.]
603     cord_individual_obj[indivial_i, :] = [ 12. 11. 171. 182.]
604     cord_individual_obj[indivial_i, :] = [ 13. 12. 133. 145.]
605     cord_individual_obj[indivial_i, :] = [ 14. 8. 125. 133.]
606     cord_individual_obj[indivial_i, :] = [ 15. 7. 105. 112.]
607     cord_individual_obj[indivial_i, :] = [ 16. 8. 179. 187.]
608     cord_individual_obj[indivial_i, :] = [ 17. 12. 153. 165.]
609     cord_individual_obj[indivial_i, :] = [ 18. 9. 106. 115.]
610     cord_individual_obj[indivial_i, :] = [ 19. 9. 123. 132.]
611     cord_individual_obj[indivial_i, :] = [ 20. 10. 60. 70.]
612     cord_individual_obj[indivial_i, :] = [ 21. 9. 99. 108.]
613     cord_individual_obj[indivial_i, :] = [ 22. 10. 166. 176.]
614     cord_individual_obj[indivial_i, :] = [ 23. 12. 128. 140.]
615     cord_individual_obj[indivial_i, :] = [ 24. 10. 127. 137.]
616
617     min(cord_individual_obj[:, 3]) = 70.0
618     historl_G_best_iter[iter, 3] = 70.0
619 Begin iteration:
620
621 iter = 19
622     cord_individual_obj[indivial_i, :] = [ 0. 11. 152. 163.]
623     cord_individual_obj[indivial_i, :] = [ 1. 9. 162. 171.]
624     cord_individual_obj[indivial_i, :] = [ 2. 9. 113. 122.]
625     cord_individual_obj[indivial_i, :] = [ 3. 10. 60. 70.]
626     cord_individual_obj[indivial_i, :] = [ 4. 12. 180. 192.]
627     cord_individual_obj[indivial_i, :] = [ 5. 11. 132. 143.]
628     cord_individual_obj[indivial_i, :] = [ 6. 10. 130. 140.]
629     cord_individual_obj[indivial_i, :] = [ 7. 11. 138. 149.]
630     cord_individual_obj[indivial_i, :] = [ 8. 11. 168. 179.]
631     cord_individual_obj[indivial_i, :] = [ 9. 10. 132. 142.]
632     cord_individual_obj[indivial_i, :] = [ 10. 11. 138. 149.]
633     cord_individual_obj[indivial_i, :] = [ 11. 10. 101. 111.]
634     cord_individual_obj[indivial_i, :] = [ 12. 12. 185. 197.]
635     cord_individual_obj[indivial_i, :] = [ 13. 10. 141. 151.]
636     cord_individual_obj[indivial_i, :] = [ 14. 9. 127. 136.]
637     cord_individual_obj[indivial_i, :] = [ 15. 7. 143. 150.]
638     cord_individual_obj[indivial_i, :] = [ 16. 8. 166. 174.]
639     cord_individual_obj[indivial_i, :] = [ 17. 12. 167. 179.]
640     cord_individual_obj[indivial_i, :] = [ 18. 10. 174. 184.]
641     cord_individual_obj[indivial_i, :] = [ 19. 8. 90. 98.]
642     cord_individual_obj[indivial_i, :] = [ 20. 9. 117. 126.]
643     cord_individual_obj[indivial_i, :] = [ 21. 8. 78. 86.]
644     cord_individual_obj[indivial_i, :] = [ 22. 9. 151. 160.]
645     cord_individual_obj[indivial_i, :] = [ 23. 11. 121. 132.]
646     cord_individual_obj[indivial_i, :] = [ 24. 9. 139. 148.]
647
648     min(cord_individual_obj[:, 3]) = 70.0
649     historl_G_best_iter[iter, 3] = 70.0
650 Begin iteration:
651
652 iter = 20
653     cord_individual_obj[indivial_i, :] = [ 0. 10. 122. 132.]
654     cord_individual_obj[indivial_i, :] = [ 1. 9. 117. 126.]
655     cord_individual_obj[indivial_i, :] = [ 2. 10. 126. 136.]
656     cord_individual_obj[indivial_i, :] = [ 3. 9. 180. 189.]
657     cord_individual_obj[indivial_i, :] = [ 4. 10. 170. 180.]
658     cord_individual_obj[indivial_i, :] = [ 5. 7. 209. 216.]
659     cord_individual_obj[indivial_i, :] = [ 6. 10. 98. 108.]
660     cord_individual_obj[indivial_i, :] = [ 7. 10. 113. 123.]
661     cord_individual_obj[indivial_i, :] = [ 8. 9. 143. 152.]
662     cord_individual_obj[indivial_i, :] = [ 9. 11. 142. 153.]
663     cord_individual_obj[indivial_i, :] = [ 10. 14. 121. 135.]
664     cord_individual_obj[indivial_i, :] = [ 11. 10. 160. 170.]
665     cord_individual_obj[indivial_i, :] = [ 12. 10. 60. 70.]
666     cord_individual_obj[indivial_i, :] = [ 13. 11. 143. 154.]
667     cord_individual_obj[indivial_i, :] = [ 14. 8. 183. 191.]

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668 cord_individual_obj[indivial_i,:] = [ 15. 8. 102. 110.]
669 cord_individual_obj[indivial_i,:] = [ 16. 13. 144. 157.]
670 cord_individual_obj[indivial_i,:] = [ 17. 10. 253. 263.]
671 cord_individual_obj[indivial_i,:] = [ 18. 11. 100. 111.]
672 cord_individual_obj[indivial_i,:] = [ 19. 12. 173. 185.]
673 cord_individual_obj[indivial_i,:] = [ 20. 10. 164. 174.]
674 cord_individual_obj[indivial_i,:] = [ 21. 9. 117. 126.]
675 cord_individual_obj[indivial_i,:] = [ 22. 10. 153. 163.]
676 cord_individual_obj[indivial_i,:] = [ 23. 11. 123. 134.]
677 cord_individual_obj[indivial_i,:] = [ 24. 9. 125. 134.]
678
679 min(cord_individual_obj[:,3]) = 70.0
680 historl_G_best_iter[iter,3] = 70.0
681 Iteration calculate over
682
683
684
685
686 All item are in Bin and:
687 Bin area = 1080
688 Real_area = 208.0
689 Proportion_of_area = 0.1925925925925926
690 BEST_CHROM =
691 berth: [ 6.5 23.5 2. 7. 18.5 9.5 13.5 15. 4.5 24.5 13.5 22.5 5.5 18.
692 3.5 13.5 1.5 19.5]
693 time: [3. 7. 0. 5. 6. 0. 2. 0. 9. 4. 6. 0. 0. 4. 7. 4. 3. 0.]
694 num_QC: [5. 2. 2. 3. 3. 2. 4. 3. 4. 2. 2. 2. 2. 7. 4. 2. 2.]
695 Objective function values and some other indicators:
696 Obj0 = 10.00      Obj1 = 60.00      Obj0 + Obj1 = 70.00
697 Total movement of crane: 0.00
698 Total waiting time in berth position: 60.00
699 Total index of q during berthing: 1094.00
700 Specific arrangement for each vessel:
701 V_id: 0          li: 7.0           xi: 6.5       bow of i: 3.0           tail of i: 10.0        gama_i0: 3.0           gama_i1: 4.0
702          gama_i1 + 1: 5.0         gama_i1 - gama_i0: 1.0   duration_time_i: 2.0    demand_i: 160.0
703          work load gap_i: 0
704 V_id: 1          li: 5.0           xi: 23.5      bow of i: 21.0           tail of i: 26.0        gama_i0: 7.0           gama_i1:
705          gama_i1 + 1: 11.0        gama_i1 - gama_i0: 3.0   duration_time_i: 4.0    demand_i: 140.0
706          load_i: 140.0
707 V_id: 2          li: 4.0           xi: 2.0       bow of i: 0.0           tail of i: 4.0         gama_i0: 0.0           gama_i1: 2.0
708          gama_i1 + 1: 3.0        gama_i1 - gama_i0: 2.0   duration_time_i: 3.0    demand_i: 100.0
709          work load gap_i: 0
710 V_id: 3          li: 8.0           xi: 7.0       bow of i: 3.0           tail of i: 11.0        gama_i0: 5.0           gama_i1: 6.0
711          gama_i1 + 1: 7.0        gama_i1 - gama_i0: 1.0   duration_time_i: 2.0    demand_i: 80.0
712          work load gap_i: 0
713 V_id: 4          li: 5.0           xi: 18.5      bow of i: 16.0           tail of i: 21.0        gama_i0: 6.0           gama_i1: 7
714          gama_i1 + 1: 8.0        gama_i1 - gama_i0: 1.0   duration_time_i: 2.0    demand_i: 100.0
715          load_i: 100.0
716 V_id: 5          li: 5.0           xi: 9.5       bow of i: 7.0           tail of i: 12.0        gama_i0: 0.0           gama_i1: 1.0
717          gama_i1 + 1: 2.0        gama_i1 - gama_i0: 1.0   duration_time_i: 2.0    demand_i: 60.0
718          work load gap_i: 0
719 V_id: 6          li: 7.0           xi: 13.5      bow of i: 10.0           tail of i: 17.0        gama_i0: 2.0           gama_i1: 3
720          gama_i1 + 1: 4.0        gama_i1 - gama_i0: 1.0   duration_time_i: 2.0    demand_i: 160.0
721          load_i: 160.0
722 V_id: 7          li: 6.0           xi: 15.0      bow of i: 12.0           tail of i: 18.0        gama_i0: 0.0           gama_i1: 0
723          gama_i1 + 1: 1.0        gama_i1 - gama_i0: 0.0   duration_time_i: 1.0    demand_i: 60.0
724          load_i: 60.0
725 V_id: 8          li: 9.0           xi: 4.5       bow of i: 0.0           tail of i: 9.0         gama_i0: 9.0           gama_i1: 9.0
726          gama_i1 + 1: 10.0       gama_i1 - gama_i0: 0.0   duration_time_i: 1.0    demand_i: 80.0
727          load_i: 80.0
728 V_id: 9          li: 7.0           xi: 24.5      bow of i: 21.0           tail of i: 28.0        gama_i0: 4.0           gama_i1: 6
729          gama_i1 + 1: 7.0        gama_i1 - gama_i0: 2.0   duration_time_i: 3.0    demand_i: 100.0
730          load_i: 100.0
731 V_id: 10         li: 5.0           xi: 13.5      bow of i: 11.0           tail of i: 16.0        gama_i0: 6.0           gama_i1:
732          gama_i1 + 1: 8.0        gama_i1 - gama_i0: 1.0   duration_time_i: 2.0    demand_i: 60.0
733          load_i: 60.0
734 V_id: 11         li: 3.0           xi: 22.5      bow of i: 21.0           tail of i: 24.0        gama_i0: 0.0           gama_i1:
735          gama_i1 + 1: 4.0        gama_i1 - gama_i0: 3.0   duration_time_i: 4.0    demand_i: 160.0
736          load_i: 160.0
737 V_id: 12         li: 3.0           xi: 5.5       bow of i: 4.0            tail of i: 7.0         gama_i0: 0.0           gama_i1: 2.0
738          gama_i1 + 1: 3.0        gama_i1 - gama_i0: 2.0   duration_time_i: 3.0    demand_i: 100.0
739          work load gap_i: 0
740 V_id: 13         li: 4.0           xi: 18.0      bow of i: 16.0           tail of i: 20.0        gama_i0: 4.0           gama_i1:
741          gama_i1 + 1: 6.0        gama_i1 - gama_i0: 1.0   duration_time_i: 2.0    demand_i: 80.0
742          load_i: 80.0
743 V_id: 14         li: 7.0           xi: 3.5       bow of i: 0.0            tail of i: 7.0         gama_i0: 7.0           gama_i1: 8.0
744          gama_i1 + 1: 9.0        gama_i1 - gama_i0: 1.0   duration_time_i: 2.0    demand_i: 160.0
745          work load gap_i: 0
746 V_id: 15         li: 5.0           xi: 13.5      bow of i: 11.0           tail of i: 16.0        gama_i0: 4.0           gama_i1:
747          gama_i1 + 1: 6.0        gama_i1 - gama_i0: 1.0   duration_time_i: 2.0    demand_i: 120.0
748          load_i: 120.0
749 V_id: 16         li: 3.0           xi: 1.5       bow of i: 0.0            tail of i: 3.0         gama_i0: 3.0           gama_i1: 6.0
750          gama_i1 + 1: 7.0        gama_i1 - gama_i0: 3.0   duration_time_i: 4.0    demand_i: 160.0
751          work load gap_i: 0

```

unknown

718	V_id: 17	li: 3.0	xi: 19.5	bow of i: 18.0	tail of i: 21.0	gama_i0: 0.0	gama_i1
: 3.0	gama_i1 + 1: 4.0		gama_i1 - gama_i0: 3.0		duration_time_i: 4.0	demand_i: 160.0	work
load_i: 160.0		work load gap_i: 0					

719

720 Algorithm finished and the total CPU time: 503 s

721 End

722