

unknown

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80 cord_individual_obj[indivial_i,:] = [16. 7. 92. 99.]
81 cord_individual_obj[indivial_i,:] = [17. 7. 65. 72.]
82 cord_individual_obj[indivial_i,:] = [18. 8. 59. 67.]
83 cord_individual_obj[indivial_i,:] = [19. 7. 71. 78.]
84 cord_individual_obj[indivial_i,:] = [20. 7. 75. 82.]
85 cord_individual_obj[indivial_i,:] = [21. 7. 66. 73.]
86 cord_individual_obj[indivial_i,:] = [22. 7. 95. 102.]
87 cord_individual_obj[indivial_i,:] = [23. 8. 62. 70.]
88 cord_individual_obj[indivial_i,:] = [24. 6. 68. 74.]
89
90 min(cord_individual_obj[:,3]) = 59.0
91 historl_G_best_iter[iter, 3] = 59.0
92 Begin iteration:
93
94 iter = 2
95 cord_individual_obj[indivial_i,:] = [ 0. 7. 103. 110.]
96 cord_individual_obj[indivial_i,:] = [ 1. 6. 53. 59.]
97 cord_individual_obj[indivial_i,:] = [ 2. 8. 99. 107.]
98 cord_individual_obj[indivial_i,:] = [ 3. 7. 64. 71.]
99 cord_individual_obj[indivial_i,:] = [ 4. 10. 128. 138.]
100 cord_individual_obj[indivial_i,:] = [ 5. 7. 90. 97.]
101 cord_individual_obj[indivial_i,:] = [ 6. 6. 67. 73.]
102 cord_individual_obj[indivial_i,:] = [ 7. 7. 76. 83.]
103 cord_individual_obj[indivial_i,:] = [ 8. 8. 48. 56.]
104 cord_individual_obj[indivial_i,:] = [ 9. 7. 65. 72.]
105 cord_individual_obj[indivial_i,:] = [10. 9. 107. 116.]
106 cord_individual_obj[indivial_i,:] = [11. 6. 94. 100.]
107 cord_individual_obj[indivial_i,:] = [12. 5. 140. 145.]
108 cord_individual_obj[indivial_i,:] = [13. 7. 65. 72.]
109 cord_individual_obj[indivial_i,:] = [14. 8. 85. 93.]
110 cord_individual_obj[indivial_i,:] = [15. 7. 126. 133.]
111 cord_individual_obj[indivial_i,:] = [16. 5. 84. 89.]
112 cord_individual_obj[indivial_i,:] = [17. 7. 116. 123.]
113 cord_individual_obj[indivial_i,:] = [18. 7. 66. 73.]
114 cord_individual_obj[indivial_i,:] = [19. 8. 103. 111.]
115 cord_individual_obj[indivial_i,:] = [20. 7. 128. 135.]
116 cord_individual_obj[indivial_i,:] = [21. 7. 70. 77.]
117 cord_individual_obj[indivial_i,:] = [22. 9. 55. 64.]
118 cord_individual_obj[indivial_i,:] = [23. 8. 79. 87.]
119 cord_individual_obj[indivial_i,:] = [24. 8. 72. 80.]
120
121 min(cord_individual_obj[:,3]) = 56.0
122 historl_G_best_iter[iter, 3] = 56.0
123 Begin iteration:
124
125 iter = 3
126 cord_individual_obj[indivial_i,:] = [ 0. 6. 68. 74.]
127 cord_individual_obj[indivial_i,:] = [ 1. 6. 57. 63.]
128 cord_individual_obj[indivial_i,:] = [ 2. 8. 70. 78.]
129 cord_individual_obj[indivial_i,:] = [ 3. 7. 57. 64.]
130 cord_individual_obj[indivial_i,:] = [ 4. 7. 78. 85.]
131 cord_individual_obj[indivial_i,:] = [ 5. 7. 62. 69.]
132 cord_individual_obj[indivial_i,:] = [ 6. 6. 39. 45.]
133 cord_individual_obj[indivial_i,:] = [ 7. 6. 72. 78.]
134 cord_individual_obj[indivial_i,:] = [ 8. 7. 66. 73.]
135 cord_individual_obj[indivial_i,:] = [ 9. 8. 77. 85.]
136 cord_individual_obj[indivial_i,:] = [10. 6. 47. 53.]
137 cord_individual_obj[indivial_i,:] = [11. 8. 92. 100.]
138 cord_individual_obj[indivial_i,:] = [12. 8. 48. 56.]
139 cord_individual_obj[indivial_i,:] = [13. 8. 53. 61.]
140 cord_individual_obj[indivial_i,:] = [14. 9. 81. 90.]
141 cord_individual_obj[indivial_i,:] = [15. 7. 52. 59.]
142 cord_individual_obj[indivial_i,:] = [16. 9. 72. 81.]
143 cord_individual_obj[indivial_i,:] = [17. 7. 90. 97.]
144 cord_individual_obj[indivial_i,:] = [18. 7. 92. 99.]
145 cord_individual_obj[indivial_i,:] = [19. 10. 96. 106.]
146 cord_individual_obj[indivial_i,:] = [20. 7. 54. 61.]
147 cord_individual_obj[indivial_i,:] = [21. 8. 110. 118.]
148 cord_individual_obj[indivial_i,:] = [22. 7. 52. 59.]
149 cord_individual_obj[indivial_i,:] = [23. 9. 72. 81.]
150 cord_individual_obj[indivial_i,:] = [24. 9. 70. 79.]
151
152 min(cord_individual_obj[:,3]) = 45.0
153 historl_G_best_iter[iter, 3] = 45.0
154 Begin iteration:
155
156 iter = 4
157 cord_individual_obj[indivial_i,:] = [ 0. 6. 71. 77.]
158 cord_individual_obj[indivial_i,:] = [ 1. 6. 60. 66.]
159 cord_individual_obj[indivial_i,:] = [ 2. 8. 85. 93.]
160 cord_individual_obj[indivial_i,:] = [ 3. 6. 93. 99.]
161 cord_individual_obj[indivial_i,:] = [ 4. 6. 78. 84.]
162 cord_individual_obj[indivial_i,:] = [ 5. 7. 72. 79.]
163 cord_individual_obj[indivial_i,:] = [ 6. 7. 60. 67.]

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164 cord_individual_obj[indivial_i,:] = [ 7. 7. 86. 93.]
165 cord_individual_obj[indivial_i,:] = [ 8. 7. 61. 68.]
166 cord_individual_obj[indivial_i,:] = [ 9. 7. 88. 95.]
167 cord_individual_obj[indivial_i,:] = [10. 6. 90. 96.]
168 cord_individual_obj[indivial_i,:] = [11. 7. 122. 129.]
169 cord_individual_obj[indivial_i,:] = [12. 5. 82. 87.]
170 cord_individual_obj[indivial_i,:] = [13. 9. 107. 116.]
171 cord_individual_obj[indivial_i,:] = [14. 7. 82. 89.]
172 cord_individual_obj[indivial_i,:] = [15. 6. 100. 106.]
173 cord_individual_obj[indivial_i,:] = [16. 6. 64. 70.]
174 cord_individual_obj[indivial_i,:] = [17. 7. 99. 106.]
175 cord_individual_obj[indivial_i,:] = [18. 8. 60. 68.]
176 cord_individual_obj[indivial_i,:] = [19. 9. 99. 108.]
177 cord_individual_obj[indivial_i,:] = [20. 7. 85. 92.]
178 cord_individual_obj[indivial_i,:] = [21. 6. 39. 45.]
179 cord_individual_obj[indivial_i,:] = [22. 8. 71. 79.]
180 cord_individual_obj[indivial_i,:] = [23. 7. 143. 150.]
181 cord_individual_obj[indivial_i,:] = [24. 9. 110. 119.]
182
183 min(cord_individual_obj[:,3]) = 45.0
184 historl_G_best_iter[iter,3] = 45.0
185 Begin iteration:
186
187 iter = 5
188 cord_individual_obj[indivial_i,:] = [ 0. 7. 63. 70.]
189 cord_individual_obj[indivial_i,:] = [ 1. 6. 93. 99.]
190 cord_individual_obj[indivial_i,:] = [ 2. 6. 52. 58.]
191 cord_individual_obj[indivial_i,:] = [ 3. 6. 76. 82.]
192 cord_individual_obj[indivial_i,:] = [ 4. 8. 81. 89.]
193 cord_individual_obj[indivial_i,:] = [ 5. 6. 64. 70.]
194 cord_individual_obj[indivial_i,:] = [ 6. 5. 81. 86.]
195 cord_individual_obj[indivial_i,:] = [ 7. 7. 75. 82.]
196 cord_individual_obj[indivial_i,:] = [ 8. 7. 95. 102.]
197 cord_individual_obj[indivial_i,:] = [ 9. 6. 90. 96.]
198 cord_individual_obj[indivial_i,:] = [10. 6. 56. 62.]
199 cord_individual_obj[indivial_i,:] = [11. 6. 78. 84.]
200 cord_individual_obj[indivial_i,:] = [12. 6. 82. 88.]
201 cord_individual_obj[indivial_i,:] = [13. 7. 62. 69.]
202 cord_individual_obj[indivial_i,:] = [14. 7. 114. 121.]
203 cord_individual_obj[indivial_i,:] = [15. 6. 65. 71.]
204 cord_individual_obj[indivial_i,:] = [16. 6. 105. 111.]
205 cord_individual_obj[indivial_i,:] = [17. 6. 98. 104.]
206 cord_individual_obj[indivial_i,:] = [18. 7. 74. 81.]
207 cord_individual_obj[indivial_i,:] = [19. 8. 56. 64.]
208 cord_individual_obj[indivial_i,:] = [20. 7. 59. 66.]
209 cord_individual_obj[indivial_i,:] = [21. 8. 64. 72.]
210 cord_individual_obj[indivial_i,:] = [22. 6. 103. 109.]
211 cord_individual_obj[indivial_i,:] = [23. 6. 39. 45.]
212 cord_individual_obj[indivial_i,:] = [24. 7. 96. 103.]
213
214 min(cord_individual_obj[:,3]) = 45.0
215 historl_G_best_iter[iter,3] = 45.0
216 Begin iteration:
217
218 iter = 6
219 cord_individual_obj[indivial_i,:] = [ 0. 6. 134. 140.]
220 cord_individual_obj[indivial_i,:] = [ 1. 6. 118. 124.]
221 cord_individual_obj[indivial_i,:] = [ 2. 9. 95. 104.]
222 cord_individual_obj[indivial_i,:] = [ 3. 7. 76. 83.]
223 cord_individual_obj[indivial_i,:] = [ 4. 6. 102. 108.]
224 cord_individual_obj[indivial_i,:] = [ 5. 6. 137. 143.]
225 cord_individual_obj[indivial_i,:] = [ 6. 5. 97. 102.]
226 cord_individual_obj[indivial_i,:] = [ 7. 7. 81. 88.]
227 cord_individual_obj[indivial_i,:] = [ 8. 8. 49. 57.]
228 cord_individual_obj[indivial_i,:] = [ 9. 7. 86. 93.]
229 cord_individual_obj[indivial_i,:] = [10. 6. 85. 91.]
230 cord_individual_obj[indivial_i,:] = [11. 6. 66. 72.]
231 cord_individual_obj[indivial_i,:] = [12. 5. 150. 155.]
232 cord_individual_obj[indivial_i,:] = [13. 7. 78. 85.]
233 cord_individual_obj[indivial_i,:] = [14. 6. 39. 45.]
234 cord_individual_obj[indivial_i,:] = [15. 6. 83. 89.]
235 cord_individual_obj[indivial_i,:] = [16. 6. 124. 130.]
236 cord_individual_obj[indivial_i,:] = [17. 6. 84. 90.]
237 cord_individual_obj[indivial_i,:] = [18. 7. 61. 68.]
238 cord_individual_obj[indivial_i,:] = [19. 8. 68. 76.]
239 cord_individual_obj[indivial_i,:] = [20. 7. 93. 100.]
240 cord_individual_obj[indivial_i,:] = [21. 8. 75. 83.]
241 cord_individual_obj[indivial_i,:] = [22. 7. 76. 83.]
242 cord_individual_obj[indivial_i,:] = [23. 7. 98. 105.]
243 cord_individual_obj[indivial_i,:] = [24. 7. 128. 135.]
244
245 min(cord_individual_obj[:,3]) = 45.0
246 historl_G_best_iter[iter,3] = 45.0
247 Begin iteration:

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248
249 iter = 7
250 cord_individual_obj[indivial_i, :] = [ 0.  5. 70. 75.]
251 cord_individual_obj[indivial_i, :] = [ 1.  9. 111. 120.]
252 cord_individual_obj[indivial_i, :] = [ 2.  7. 178. 185.]
253 cord_individual_obj[indivial_i, :] = [ 3.  7. 105. 112.]
254 cord_individual_obj[indivial_i, :] = [ 4.  8. 123. 131.]
255 cord_individual_obj[indivial_i, :] = [ 5.  7. 50. 57.]
256 cord_individual_obj[indivial_i, :] = [ 6.  9. 85. 94.]
257 cord_individual_obj[indivial_i, :] = [ 7.  7. 55. 62.]
258 cord_individual_obj[indivial_i, :] = [ 8.  9. 38. 47.]
259 cord_individual_obj[indivial_i, :] = [ 9.  7. 61. 68.]
260 cord_individual_obj[indivial_i, :] = [10.  6. 78. 84.]
261 cord_individual_obj[indivial_i, :] = [11.  7. 80. 87.]
262 cord_individual_obj[indivial_i, :] = [12.  6. 39. 45.]
263 cord_individual_obj[indivial_i, :] = [13.  8. 60. 68.]
264 cord_individual_obj[indivial_i, :] = [14.  7. 114. 121.]
265 cord_individual_obj[indivial_i, :] = [15.  5. 71. 76.]
266 cord_individual_obj[indivial_i, :] = [16.  9. 135. 144.]
267 cord_individual_obj[indivial_i, :] = [17.  8. 68. 76.]
268 cord_individual_obj[indivial_i, :] = [18. 10. 56. 66.]
269 cord_individual_obj[indivial_i, :] = [19.  6. 87. 93.]
270 cord_individual_obj[indivial_i, :] = [20.  8. 65. 73.]
271 cord_individual_obj[indivial_i, :] = [21.  8. 62. 70.]
272 cord_individual_obj[indivial_i, :] = [22.  7. 98. 105.]
273 cord_individual_obj[indivial_i, :] = [23.  5. 79. 84.]
274 cord_individual_obj[indivial_i, :] = [24.  8. 113. 121.]
275
276 min(cord_individual_obj[:, 3]) = 45.0
277 historl_G_best_iter[iter, 3] = 45.0
278 Begin iteration:
279
280 iter = 8
281 cord_individual_obj[indivial_i, :] = [ 0.  7. 64. 71.]
282 cord_individual_obj[indivial_i, :] = [ 1.  7. 116. 123.]
283 cord_individual_obj[indivial_i, :] = [ 2.  6. 39. 45.]
284 cord_individual_obj[indivial_i, :] = [ 3.  6. 47. 53.]
285 cord_individual_obj[indivial_i, :] = [ 4.  8. 81. 89.]
286 cord_individual_obj[indivial_i, :] = [ 5.  6. 63. 69.]
287 cord_individual_obj[indivial_i, :] = [ 6.  6. 114. 120.]
288 cord_individual_obj[indivial_i, :] = [ 7.  7. 93. 100.]
289 cord_individual_obj[indivial_i, :] = [ 8.  8. 66. 74.]
290 cord_individual_obj[indivial_i, :] = [ 9.  6. 69. 75.]
291 cord_individual_obj[indivial_i, :] = [10.  7. 92. 99.]
292 cord_individual_obj[indivial_i, :] = [11.  6. 52. 58.]
293 cord_individual_obj[indivial_i, :] = [12.  6. 68. 74.]
294 cord_individual_obj[indivial_i, :] = [13.  8. 48. 56.]
295 cord_individual_obj[indivial_i, :] = [14.  9. 86. 95.]
296 cord_individual_obj[indivial_i, :] = [15.  7. 128. 135.]
297 cord_individual_obj[indivial_i, :] = [16.  9. 159. 168.]
298 cord_individual_obj[indivial_i, :] = [17.  8. 68. 76.]
299 cord_individual_obj[indivial_i, :] = [18.  8. 127. 135.]
300 cord_individual_obj[indivial_i, :] = [19.  6. 93. 99.]
301 cord_individual_obj[indivial_i, :] = [20.  6. 83. 89.]
302 cord_individual_obj[indivial_i, :] = [21.  6. 85. 91.]
303 cord_individual_obj[indivial_i, :] = [22.  7. 69. 76.]
304 cord_individual_obj[indivial_i, :] = [23.  6. 59. 65.]
305 cord_individual_obj[indivial_i, :] = [24.  6. 136. 142.]
306
307 min(cord_individual_obj[:, 3]) = 45.0
308 historl_G_best_iter[iter, 3] = 45.0
309 Begin iteration:
310
311 iter = 9
312 cord_individual_obj[indivial_i, :] = [ 0.  6. 89. 95.]
313 cord_individual_obj[indivial_i, :] = [ 1.  6. 99. 105.]
314 cord_individual_obj[indivial_i, :] = [ 2.  6. 52. 58.]
315 cord_individual_obj[indivial_i, :] = [ 3.  7. 132. 139.]
316 cord_individual_obj[indivial_i, :] = [ 4.  6. 111. 117.]
317 cord_individual_obj[indivial_i, :] = [ 5. 10. 90. 100.]
318 cord_individual_obj[indivial_i, :] = [ 6.  6. 126. 132.]
319 cord_individual_obj[indivial_i, :] = [ 7.  8. 74. 82.]
320 cord_individual_obj[indivial_i, :] = [ 8.  7. 87. 94.]
321 cord_individual_obj[indivial_i, :] = [ 9.  6. 87. 93.]
322 cord_individual_obj[indivial_i, :] = [10.  6. 46. 52.]
323 cord_individual_obj[indivial_i, :] = [11.  6. 93. 99.]
324 cord_individual_obj[indivial_i, :] = [12.  6. 77. 83.]
325 cord_individual_obj[indivial_i, :] = [13.  7. 102. 109.]
326 cord_individual_obj[indivial_i, :] = [14.  7. 119. 126.]
327 cord_individual_obj[indivial_i, :] = [15.  7. 154. 161.]
328 cord_individual_obj[indivial_i, :] = [16.  6. 39. 45.]
329 cord_individual_obj[indivial_i, :] = [17.  5. 69. 74.]
330 cord_individual_obj[indivial_i, :] = [18.  7. 64. 71.]
331 cord_individual_obj[indivial_i, :] = [19.  8. 86. 94.]

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332 cord_individual_obj[indivial_i, :] = [20. 9. 50. 59.]
333 cord_individual_obj[indivial_i, :] = [21. 7. 88. 95.]
334 cord_individual_obj[indivial_i, :] = [22. 7. 67. 74.]
335 cord_individual_obj[indivial_i, :] = [23. 6. 92. 98.]
336 cord_individual_obj[indivial_i, :] = [24. 9. 89. 98.]
337
338 min(cord_individual_obj[:, 3]) = 45.0
339 histol_G_best_iter[iter, 3] = 45.0
340 Begin iteration:
341
342 iter = 10
343 cord_individual_obj[indivial_i, :] = [ 0. 8. 102. 110.]
344 cord_individual_obj[indivial_i, :] = [ 1. 5. 78. 83.]
345 cord_individual_obj[indivial_i, :] = [ 2. 8. 95. 103.]
346 cord_individual_obj[indivial_i, :] = [ 3. 7. 64. 71.]
347 cord_individual_obj[indivial_i, :] = [ 4. 6. 139. 145.]
348 cord_individual_obj[indivial_i, :] = [ 5. 7. 55. 62.]
349 cord_individual_obj[indivial_i, :] = [ 6. 7. 69. 76.]
350 cord_individual_obj[indivial_i, :] = [ 7. 7. 95. 102.]
351 cord_individual_obj[indivial_i, :] = [ 8. 6. 120. 126.]
352 cord_individual_obj[indivial_i, :] = [ 9. 7. 124. 131.]
353 cord_individual_obj[indivial_i, :] = [10. 7. 95. 102.]
354 cord_individual_obj[indivial_i, :] = [11. 7. 62. 69.]
355 cord_individual_obj[indivial_i, :] = [12. 7. 122. 129.]
356 cord_individual_obj[indivial_i, :] = [13. 8. 80. 88.]
357 cord_individual_obj[indivial_i, :] = [14. 6. 98. 104.]
358 cord_individual_obj[indivial_i, :] = [15. 6. 39. 45.]
359 cord_individual_obj[indivial_i, :] = [16. 7. 99. 106.]
360 cord_individual_obj[indivial_i, :] = [17. 5. 100. 105.]
361 cord_individual_obj[indivial_i, :] = [18. 9. 78. 87.]
362 cord_individual_obj[indivial_i, :] = [19. 10. 55. 65.]
363 cord_individual_obj[indivial_i, :] = [20. 7. 59. 66.]
364 cord_individual_obj[indivial_i, :] = [21. 8. 99. 107.]
365 cord_individual_obj[indivial_i, :] = [22. 8. 77. 85.]
366 cord_individual_obj[indivial_i, :] = [23. 7. 138. 145.]
367 cord_individual_obj[indivial_i, :] = [24. 9. 79. 88.]
368
369 min(cord_individual_obj[:, 3]) = 45.0
370 histol_G_best_iter[iter, 3] = 45.0
371 Begin iteration:
372
373 iter = 11
374 cord_individual_obj[indivial_i, :] = [ 0. 7. 128. 135.]
375 cord_individual_obj[indivial_i, :] = [ 1. 8. 86. 94.]
376 cord_individual_obj[indivial_i, :] = [ 2. 9. 161. 170.]
377 cord_individual_obj[indivial_i, :] = [ 3. 6. 120. 126.]
378 cord_individual_obj[indivial_i, :] = [ 4. 6. 39. 45.]
379 cord_individual_obj[indivial_i, :] = [ 5. 7. 48. 55.]
380 cord_individual_obj[indivial_i, :] = [ 6. 7. 91. 98.]
381 cord_individual_obj[indivial_i, :] = [ 7. 7. 92. 99.]
382 cord_individual_obj[indivial_i, :] = [ 8. 7. 94. 101.]
383 cord_individual_obj[indivial_i, :] = [ 9. 5. 89. 94.]
384 cord_individual_obj[indivial_i, :] = [10. 6. 66. 72.]
385 cord_individual_obj[indivial_i, :] = [11. 6. 86. 92.]
386 cord_individual_obj[indivial_i, :] = [12. 7. 89. 96.]
387 cord_individual_obj[indivial_i, :] = [13. 9. 70. 79.]
388 cord_individual_obj[indivial_i, :] = [14. 9. 91. 100.]
389 cord_individual_obj[indivial_i, :] = [15. 6. 47. 53.]
390 cord_individual_obj[indivial_i, :] = [16. 7. 78. 85.]
391 cord_individual_obj[indivial_i, :] = [17. 7. 37. 44.]
392 cord_individual_obj[indivial_i, :] = [18. 11. 83. 94.]
393 cord_individual_obj[indivial_i, :] = [19. 9. 161. 170.]
394 cord_individual_obj[indivial_i, :] = [20. 8. 78. 86.]
395 cord_individual_obj[indivial_i, :] = [21. 7. 66. 73.]
396 cord_individual_obj[indivial_i, :] = [22. 8. 106. 114.]
397 cord_individual_obj[indivial_i, :] = [23. 7. 76. 83.]
398 cord_individual_obj[indivial_i, :] = [24. 8. 88. 96.]
399
400 min(cord_individual_obj[:, 3]) = 44.0
401 histol_G_best_iter[iter, 3] = 44.0
402 Begin iteration:
403
404 iter = 12
405 cord_individual_obj[indivial_i, :] = [ 0. 5. 107. 112.]
406 cord_individual_obj[indivial_i, :] = [ 1. 6. 51. 57.]
407 cord_individual_obj[indivial_i, :] = [ 2. 7. 37. 44.]
408 cord_individual_obj[indivial_i, :] = [ 3. 5. 128. 133.]
409 cord_individual_obj[indivial_i, :] = [ 4. 6. 95. 101.]
410 cord_individual_obj[indivial_i, :] = [ 5. 7. 81. 88.]
411 cord_individual_obj[indivial_i, :] = [ 6. 6. 78. 84.]
412 cord_individual_obj[indivial_i, :] = [ 7. 7. 72. 79.]
413 cord_individual_obj[indivial_i, :] = [ 8. 7. 70. 77.]
414 cord_individual_obj[indivial_i, :] = [ 9. 9. 80. 89.]
415 cord_individual_obj[indivial_i, :] = [10. 6. 51. 57.]

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416 cord_individual_obj[indivial_i,:] = [11. 8. 63. 71.]
417 cord_individual_obj[indivial_i,:] = [12. 6. 69. 75.]
418 cord_individual_obj[indivial_i,:] = [13. 8. 119. 127.]
419 cord_individual_obj[indivial_i,:] = [14. 7. 54. 61.]
420 cord_individual_obj[indivial_i,:] = [15. 7. 51. 58.]
421 cord_individual_obj[indivial_i,:] = [16. 6. 72. 78.]
422 cord_individual_obj[indivial_i,:] = [17. 7. 45. 52.]
423 cord_individual_obj[indivial_i,:] = [18. 8. 134. 142.]
424 cord_individual_obj[indivial_i,:] = [19. 8. 79. 87.]
425 cord_individual_obj[indivial_i,:] = [20. 6. 145. 151.]
426 cord_individual_obj[indivial_i,:] = [21. 6. 80. 86.]
427 cord_individual_obj[indivial_i,:] = [22. 7. 58. 65.]
428 cord_individual_obj[indivial_i,:] = [23. 7. 61. 68.]
429 cord_individual_obj[indivial_i,:] = [24. 8. 65. 73.]
430
431 min(cord_individual_obj[:,3]) = 44.0
432 histol_G_best_iter[iter,3] = 44.0
433 Begin iteration:
434
435 iter = 13
436 cord_individual_obj[indivial_i,:] = [ 0. 7. 66. 73.]
437 cord_individual_obj[indivial_i,:] = [ 1. 7. 43. 50.]
438 cord_individual_obj[indivial_i,:] = [ 2. 9. 71. 80.]
439 cord_individual_obj[indivial_i,:] = [ 3. 6. 82. 88.]
440 cord_individual_obj[indivial_i,:] = [ 4. 7. 137. 144.]
441 cord_individual_obj[indivial_i,:] = [ 5. 8. 73. 81.]
442 cord_individual_obj[indivial_i,:] = [ 6. 7. 87. 94.]
443 cord_individual_obj[indivial_i,:] = [ 7. 8. 56. 64.]
444 cord_individual_obj[indivial_i,:] = [ 8. 8. 51. 59.]
445 cord_individual_obj[indivial_i,:] = [ 9. 7. 72. 79.]
446 cord_individual_obj[indivial_i,:] = [10. 5. 45. 50.]
447 cord_individual_obj[indivial_i,:] = [11. 7. 51. 58.]
448 cord_individual_obj[indivial_i,:] = [12. 6. 81. 87.]
449 cord_individual_obj[indivial_i,:] = [13. 9. 176. 185.]
450 cord_individual_obj[indivial_i,:] = [14. 9. 64. 73.]
451 cord_individual_obj[indivial_i,:] = [15. 7. 86. 93.]
452 cord_individual_obj[indivial_i,:] = [16. 8. 64. 72.]
453 cord_individual_obj[indivial_i,:] = [17. 6. 57. 63.]
454 cord_individual_obj[indivial_i,:] = [18. 8. 88. 96.]
455 cord_individual_obj[indivial_i,:] = [19. 8. 64. 72.]
456 cord_individual_obj[indivial_i,:] = [20. 7. 37. 44.]
457 cord_individual_obj[indivial_i,:] = [21. 8. 86. 94.]
458 cord_individual_obj[indivial_i,:] = [22. 7. 87. 94.]
459 cord_individual_obj[indivial_i,:] = [23. 7. 59. 66.]
460 cord_individual_obj[indivial_i,:] = [24. 8. 67. 75.]
461
462 min(cord_individual_obj[:,3]) = 44.0
463 histol_G_best_iter[iter,3] = 44.0
464 Begin iteration:
465
466 iter = 14
467 cord_individual_obj[indivial_i,:] = [ 0. 7. 106. 113.]
468 cord_individual_obj[indivial_i,:] = [ 1. 8. 88. 96.]
469 cord_individual_obj[indivial_i,:] = [ 2. 7. 97. 104.]
470 cord_individual_obj[indivial_i,:] = [ 3. 8. 90. 98.]
471 cord_individual_obj[indivial_i,:] = [ 4. 6. 144. 150.]
472 cord_individual_obj[indivial_i,:] = [ 5. 11. 103. 114.]
473 cord_individual_obj[indivial_i,:] = [ 6. 6. 57. 63.]
474 cord_individual_obj[indivial_i,:] = [ 7. 7. 102. 109.]
475 cord_individual_obj[indivial_i,:] = [ 8. 5. 54. 59.]
476 cord_individual_obj[indivial_i,:] = [ 9. 8. 94. 102.]
477 cord_individual_obj[indivial_i,:] = [10. 4. 91. 95.]
478 cord_individual_obj[indivial_i,:] = [11. 7. 79. 86.]
479 cord_individual_obj[indivial_i,:] = [12. 5. 82. 87.]
480 cord_individual_obj[indivial_i,:] = [13. 7. 37. 44.]
481 cord_individual_obj[indivial_i,:] = [14. 8. 88. 96.]
482 cord_individual_obj[indivial_i,:] = [15. 6. 83. 89.]
483 cord_individual_obj[indivial_i,:] = [16. 5. 86. 91.]
484 cord_individual_obj[indivial_i,:] = [17. 5. 98. 103.]
485 cord_individual_obj[indivial_i,:] = [18. 8. 73. 81.]
486 cord_individual_obj[indivial_i,:] = [19. 7. 81. 88.]
487 cord_individual_obj[indivial_i,:] = [20. 7. 59. 66.]
488 cord_individual_obj[indivial_i,:] = [21. 7. 99. 106.]
489 cord_individual_obj[indivial_i,:] = [22. 7. 58. 65.]
490 cord_individual_obj[indivial_i,:] = [23. 7. 118. 125.]
491 cord_individual_obj[indivial_i,:] = [24. 5. 186. 191.]
492
493 min(cord_individual_obj[:,3]) = 44.0
494 histol_G_best_iter[iter,3] = 44.0
495 Begin iteration:
496
497 iter = 15
498 cord_individual_obj[indivial_i,:] = [ 0. 7. 66. 73.]
499 cord_individual_obj[indivial_i,:] = [ 1. 8. 43. 51.]

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500 cord_individual_obj[indivial_i,:] = [ 2. 7. 50. 57.]
501 cord_individual_obj[indivial_i,:] = [ 3. 5. 92. 97.]
502 cord_individual_obj[indivial_i,:] = [ 4. 6. 116. 122.]
503 cord_individual_obj[indivial_i,:] = [ 5. 9. 85. 94.]
504 cord_individual_obj[indivial_i,:] = [ 6. 7. 77. 84.]
505 cord_individual_obj[indivial_i,:] = [ 7. 7. 143. 150.]
506 cord_individual_obj[indivial_i,:] = [ 8. 8. 51. 59.]
507 cord_individual_obj[indivial_i,:] = [ 9. 7. 72. 79.]
508 cord_individual_obj[indivial_i,:] = [10. 5. 54. 59.]
509 cord_individual_obj[indivial_i,:] = [11. 7. 51. 58.]
510 cord_individual_obj[indivial_i,:] = [12. 6. 81. 87.]
511 cord_individual_obj[indivial_i,:] = [13. 8. 179. 187.]
512 cord_individual_obj[indivial_i,:] = [14. 7. 47. 54.]
513 cord_individual_obj[indivial_i,:] = [15. 6. 74. 80.]
514 cord_individual_obj[indivial_i,:] = [16. 8. 76. 84.]
515 cord_individual_obj[indivial_i,:] = [17. 8. 51. 59.]
516 cord_individual_obj[indivial_i,:] = [18. 8. 84. 92.]
517 cord_individual_obj[indivial_i,:] = [19. 8. 62. 70.]
518 cord_individual_obj[indivial_i,:] = [20. 6. 65. 71.]
519 cord_individual_obj[indivial_i,:] = [21. 8. 140. 148.]
520 cord_individual_obj[indivial_i,:] = [22. 7. 81. 88.]
521 cord_individual_obj[indivial_i,:] = [23. 7. 84. 91.]
522 cord_individual_obj[indivial_i,:] = [24. 7. 37. 44.]
523
524 min(cord_individual_obj[:, 3]) = 44.0
525 histol_G_best_iter[iter, 3] = 44.0
526 Begin iteration:
527
528 iter = 16
529 cord_individual_obj[indivial_i,:] = [ 0. 6. 99. 105.]
530 cord_individual_obj[indivial_i,:] = [ 1. 7. 67. 74.]
531 cord_individual_obj[indivial_i,:] = [ 2. 8. 69. 77.]
532 cord_individual_obj[indivial_i,:] = [ 3. 7. 61. 68.]
533 cord_individual_obj[indivial_i,:] = [ 4. 7. 136. 143.]
534 cord_individual_obj[indivial_i,:] = [ 5. 7. 108. 115.]
535 cord_individual_obj[indivial_i,:] = [ 6. 7. 64. 71.]
536 cord_individual_obj[indivial_i,:] = [ 7. 7. 126. 133.]
537 cord_individual_obj[indivial_i,:] = [ 8. 8. 62. 70.]
538 cord_individual_obj[indivial_i,:] = [ 9. 8. 97. 105.]
539 cord_individual_obj[indivial_i,:] = [10. 5. 86. 91.]
540 cord_individual_obj[indivial_i,:] = [11. 8. 77. 85.]
541 cord_individual_obj[indivial_i,:] = [12. 6. 85. 91.]
542 cord_individual_obj[indivial_i,:] = [13. 7. 37. 44.]
543 cord_individual_obj[indivial_i,:] = [14. 7. 86. 93.]
544 cord_individual_obj[indivial_i,:] = [15. 6. 104. 110.]
545 cord_individual_obj[indivial_i,:] = [16. 7. 144. 151.]
546 cord_individual_obj[indivial_i,:] = [17. 5. 63. 68.]
547 cord_individual_obj[indivial_i,:] = [18. 7. 126. 133.]
548 cord_individual_obj[indivial_i,:] = [19. 7. 86. 93.]
549 cord_individual_obj[indivial_i,:] = [20. 7. 70. 77.]
550 cord_individual_obj[indivial_i,:] = [21. 7. 107. 114.]
551 cord_individual_obj[indivial_i,:] = [22. 7. 58. 65.]
552 cord_individual_obj[indivial_i,:] = [23. 7. 123. 130.]
553 cord_individual_obj[indivial_i,:] = [24. 8. 88. 96.]
554
555 min(cord_individual_obj[:, 3]) = 44.0
556 histol_G_best_iter[iter, 3] = 44.0
557 Begin iteration:
558
559 iter = 17
560 cord_individual_obj[indivial_i,:] = [ 0. 6. 66. 72.]
561 cord_individual_obj[indivial_i,:] = [ 1. 5. 47. 52.]
562 cord_individual_obj[indivial_i,:] = [ 2. 6. 118. 124.]
563 cord_individual_obj[indivial_i,:] = [ 3. 7. 65. 72.]
564 cord_individual_obj[indivial_i,:] = [ 4. 5. 136. 141.]
565 cord_individual_obj[indivial_i,:] = [ 5. 7. 100. 107.]
566 cord_individual_obj[indivial_i,:] = [ 6. 7. 81. 88.]
567 cord_individual_obj[indivial_i,:] = [ 7. 6. 69. 75.]
568 cord_individual_obj[indivial_i,:] = [ 8. 6. 88. 94.]
569 cord_individual_obj[indivial_i,:] = [ 9. 6. 95. 101.]
570 cord_individual_obj[indivial_i,:] = [10. 8. 106. 114.]
571 cord_individual_obj[indivial_i,:] = [11. 7. 98. 105.]
572 cord_individual_obj[indivial_i,:] = [12. 6. 99. 105.]
573 cord_individual_obj[indivial_i,:] = [13. 9. 101. 110.]
574 cord_individual_obj[indivial_i,:] = [14. 7. 93. 100.]
575 cord_individual_obj[indivial_i,:] = [15. 8. 91. 99.]
576 cord_individual_obj[indivial_i,:] = [16. 7. 37. 44.]
577 cord_individual_obj[indivial_i,:] = [17. 6. 57. 63.]
578 cord_individual_obj[indivial_i,:] = [18. 8. 87. 95.]
579 cord_individual_obj[indivial_i,:] = [19. 6. 70. 76.]
580 cord_individual_obj[indivial_i,:] = [20. 7. 118. 125.]
581 cord_individual_obj[indivial_i,:] = [21. 6. 133. 139.]
582 cord_individual_obj[indivial_i,:] = [22. 7. 102. 109.]
583 cord_individual_obj[indivial_i,:] = [23. 8. 45. 53.]

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unknown

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584     cord_individual_obj[indivial_i, :] = [ 24.  6. 113. 119.]
585
586     min(cord_individual_obj[:, 3]) = 44.0
587     historl_G_best_iter[iter, 3] = 44.0
588 Begin iteration:
589 iter = 18
590     cord_individual_obj[indivial_i, :] = [ 0.  8. 97. 105.]
591     cord_individual_obj[indivial_i, :] = [ 1.  6. 59. 65.]
592     cord_individual_obj[indivial_i, :] = [ 2.  6. 158. 164.]
593     cord_individual_obj[indivial_i, :] = [ 3.  8. 76. 84.]
594     cord_individual_obj[indivial_i, :] = [ 4.  7. 37. 44.]
595     cord_individual_obj[indivial_i, :] = [ 5.  9. 76. 85.]
596     cord_individual_obj[indivial_i, :] = [ 6.  6. 64. 70.]
597     cord_individual_obj[indivial_i, :] = [ 7.  6. 47. 53.]
598     cord_individual_obj[indivial_i, :] = [ 8.  6. 40. 46.]
599     cord_individual_obj[indivial_i, :] = [ 9.  9. 96. 105.]
600     cord_individual_obj[indivial_i, :] = [10.  5. 85. 90.]
601     cord_individual_obj[indivial_i, :] = [11.  8. 136. 144.]
602     cord_individual_obj[indivial_i, :] = [12.  6. 91. 97.]
603     cord_individual_obj[indivial_i, :] = [13.  8. 80. 88.]
604     cord_individual_obj[indivial_i, :] = [14.  6. 75. 81.]
605     cord_individual_obj[indivial_i, :] = [15.  7. 63. 70.]
606     cord_individual_obj[indivial_i, :] = [16.  7. 64. 71.]
607     cord_individual_obj[indivial_i, :] = [17.  7. 86. 93.]
608     cord_individual_obj[indivial_i, :] = [18.  6. 75. 81.]
609     cord_individual_obj[indivial_i, :] = [19.  6. 66. 72.]
610     cord_individual_obj[indivial_i, :] = [20.  6. 64. 70.]
611     cord_individual_obj[indivial_i, :] = [21.  7. 76. 83.]
612     cord_individual_obj[indivial_i, :] = [22.  6. 118. 124.]
613     cord_individual_obj[indivial_i, :] = [23.  8. 55. 63.]
614     cord_individual_obj[indivial_i, :] = [24.  6. 137. 143.]
615
616
617     min(cord_individual_obj[:, 3]) = 44.0
618     historl_G_best_iter[iter, 3] = 44.0
619 Begin iteration:
620
621 iter = 19
622     cord_individual_obj[indivial_i, :] = [ 0.  7. 66. 73.]
623     cord_individual_obj[indivial_i, :] = [ 1.  7. 59. 66.]
624     cord_individual_obj[indivial_i, :] = [ 2.  7. 37. 44.]
625     cord_individual_obj[indivial_i, :] = [ 3.  5. 75. 80.]
626     cord_individual_obj[indivial_i, :] = [ 4.  6. 136. 142.]
627     cord_individual_obj[indivial_i, :] = [ 5.  8. 81. 89.]
628     cord_individual_obj[indivial_i, :] = [ 6.  7. 75. 82.]
629     cord_individual_obj[indivial_i, :] = [ 7.  7. 147. 154.]
630     cord_individual_obj[indivial_i, :] = [ 8.  5. 64. 69.]
631     cord_individual_obj[indivial_i, :] = [ 9.  8. 54. 62.]
632     cord_individual_obj[indivial_i, :] = [10.  6. 50. 56.]
633     cord_individual_obj[indivial_i, :] = [11.  8. 67. 75.]
634     cord_individual_obj[indivial_i, :] = [12.  6. 93. 99.]
635     cord_individual_obj[indivial_i, :] = [13.  8. 52. 60.]
636     cord_individual_obj[indivial_i, :] = [14.  9. 116. 125.]
637     cord_individual_obj[indivial_i, :] = [15.  6. 67. 73.]
638     cord_individual_obj[indivial_i, :] = [16.  6. 70. 76.]
639     cord_individual_obj[indivial_i, :] = [17.  8. 57. 65.]
640     cord_individual_obj[indivial_i, :] = [18.  7. 131. 138.]
641     cord_individual_obj[indivial_i, :] = [19.  8. 128. 136.]
642     cord_individual_obj[indivial_i, :] = [20.  6. 64. 70.]
643     cord_individual_obj[indivial_i, :] = [21.  7. 68. 75.]
644     cord_individual_obj[indivial_i, :] = [22.  7. 66. 73.]
645     cord_individual_obj[indivial_i, :] = [23.  7. 72. 79.]
646     cord_individual_obj[indivial_i, :] = [24.  6. 66. 72.]
647
648     min(cord_individual_obj[:, 3]) = 44.0
649     historl_G_best_iter[iter, 3] = 44.0
650 Begin iteration:
651
652 iter = 20
653     cord_individual_obj[indivial_i, :] = [ 0.  7. 76. 83.]
654     cord_individual_obj[indivial_i, :] = [ 1.  6. 112. 118.]
655     cord_individual_obj[indivial_i, :] = [ 2.  9. 71. 80.]
656     cord_individual_obj[indivial_i, :] = [ 3.  5. 48. 53.]
657     cord_individual_obj[indivial_i, :] = [ 4.  7. 106. 113.]
658     cord_individual_obj[indivial_i, :] = [ 5.  7. 60. 67.]
659     cord_individual_obj[indivial_i, :] = [ 6.  5. 99. 104.]
660     cord_individual_obj[indivial_i, :] = [ 7.  7. 37. 44.]
661     cord_individual_obj[indivial_i, :] = [ 8.  7. 83. 90.]
662     cord_individual_obj[indivial_i, :] = [ 9.  8. 67. 75.]
663     cord_individual_obj[indivial_i, :] = [10.  5. 44. 49.]
664     cord_individual_obj[indivial_i, :] = [11.  8. 61. 69.]
665     cord_individual_obj[indivial_i, :] = [12.  6. 75. 81.]
666     cord_individual_obj[indivial_i, :] = [13.  8. 50. 58.]
667     cord_individual_obj[indivial_i, :] = [14.  8. 109. 117.]
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668 cord_individual_obj[indivial_i,:] = [ 15. 5. 113. 118.]
669 cord_individual_obj[indivial_i,:] = [ 16. 7. 137. 144.]
670 cord_individual_obj[indivial_i,:] = [ 17. 7. 129. 136.]
671 cord_individual_obj[indivial_i,:] = [ 18. 7. 77. 84.]
672 cord_individual_obj[indivial_i,:] = [ 19. 7. 110. 117.]
673 cord_individual_obj[indivial_i,:] = [ 20. 7. 138. 145.]
674 cord_individual_obj[indivial_i,:] = [ 21. 8. 101. 109.]
675 cord_individual_obj[indivial_i,:] = [ 22. 7. 70. 77.]
676 cord_individual_obj[indivial_i,:] = [ 23. 8. 93. 101.]
677 cord_individual_obj[indivial_i,:] = [ 24. 9. 108. 117.]
678
679 min(cord_individual_obj[:, 3]) = 44.0
680 historl_G_best_iter[iter, 3] = 44.0
681 Iteration calculate over
682
683
684
685
686 All item are in Bin and:
687 Bin area = 1080
688 Real_area = 191.0
689 Proportion_of_area = 0.17685185185185184
690 BEST_CHROM =
691 berth: [22.5 16.5 2. 7. 23.5 1.5 3.5 7. 8.5 12.5 22. 8. 15.5]
692 time: [1. 0. 0. 0. 3. 5. 4. 5. 1. 0. 0. 2. 3.]
693 num_QC: [2. 3. 2. 4. 3. 3. 3. 4. 4. 4. 4. 4. 4.]
694 Objective function values and some other indicators:
695 Obj0 = 7.00 Obj1 = 37.00 Obj0 + Obj1 = 44.00
696 Total movement of crane: 0.00
697 Total waiting time in berth position: 24.00
698 Total index of q during berthing: 630.00
699 Specific arrangement for each vessel:
700 V_id: 0 li: 9.0 xi: 22.5 bow of i: 18.0 tail of i: 27.0 gama_i0: 1.0 gama_i1: 2
701 .0 gama_i1 + 1: 3.0 gama_i1 - gama_i0: 1.0 duration_time_i: 2.0 demand_i: 80.0 work
702 load_i: 80.0 work load gap_i: 0
703 V_id: 1 li: 3.0 xi: 16.5 bow of i: 15.0 tail of i: 18.0 gama_i0: 0.0 gama_i1: 1
704 .0 gama_i1 + 1: 2.0 gama_i1 - gama_i0: 1.0 duration_time_i: 2.0 demand_i: 120.0 work
705 load_i: 120.0 work load gap_i: 0
706 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
707 100.0 gama_i1 + 1: 3.0 gama_i1 - gama_i0: 2.0 duration_time_i: 3.0 demand_i: 100.0 work load_i:
708 V_id: 3 li: 6.0 xi: 7.0 bow of i: 4.0 tail of i: 10.0 gama_i0: 0.0 gama_i1: 0.0
709 60.0 gama_i1 + 1: 1.0 gama_i1 - gama_i0: 0.0 duration_time_i: 1.0 demand_i: 60.0 work load_i:
710 V_id: 4 li: 9.0 xi: 23.5 bow of i: 19.0 tail of i: 28.0 gama_i0: 3.0 gama_i1: 5
711 .0 gama_i1 + 1: 6.0 gama_i1 - gama_i0: 2.0 duration_time_i: 3.0 demand_i: 160.0 work
712 load_i: 160.0 work load gap_i: 0
713 V_id: 5 li: 3.0 xi: 1.5 bow of i: 0.0 tail of i: 3.0 gama_i0: 5.0 gama_i1: 7.0
714 160.0 gama_i1 + 1: 8.0 gama_i1 - gama_i0: 2.0 duration_time_i: 3.0 demand_i: 160.0 work load_i:
715 V_id: 6 li: 7.0 xi: 3.5 bow of i: 0.0 tail of i: 7.0 gama_i0: 4.0 gama_i1: 4.0
716 60.0 gama_i1 + 1: 5.0 gama_i1 - gama_i0: 0.0 duration_time_i: 1.0 demand_i: 60.0 work load_i:
717 V_id: 7 li: 8.0 xi: 7.0 bow of i: 3.0 tail of i: 11.0 gama_i0: 5.0 gama_i1: 5.0
718 60.0 gama_i1 + 1: 6.0 gama_i1 - gama_i0: 0.0 duration_time_i: 1.0 demand_i: 60.0 work load_i:
719 V_id: 8 li: 9.0 xi: 8.5 bow of i: 4.0 tail of i: 13.0 gama_i0: 1.0 gama_i1: 1.0
720 80.0 gama_i1 + 1: 2.0 gama_i1 - gama_i0: 0.0 duration_time_i: 1.0 demand_i: 80.0 work load_i:
721 V_id: 9 li: 5.0 xi: 12.5 bow of i: 10.0 tail of i: 15.0 gama_i0: 0.0 gama_i1: 0
722 .0 gama_i1 + 1: 1.0 gama_i1 - gama_i0: 0.0 duration_time_i: 1.0 demand_i: 80.0 work
723 load_i: 80.0 work load gap_i: 0
724 V_id: 10 li: 8.0 xi: 22.0 bow of i: 18.0 tail of i: 26.0 gama_i0: 0.0 gama_i1: 1
725 : 0.0 gama_i1 + 1: 1.0 gama_i1 - gama_i0: 0.0 duration_time_i: 1.0 demand_i: 60.0 work
726 load_i: 60.0 work load gap_i: 0
727 V_id: 11 li: 8.0 xi: 8.0 bow of i: 4.0 tail of i: 12.0 gama_i0: 2.0 gama_i1: 3
728 .0 gama_i1 + 1: 4.0 gama_i1 - gama_i0: 1.0 duration_time_i: 2.0 demand_i: 160.0 work
729 load_i: 160.0 work load gap_i: 0
730 V_id: 12 li: 7.0 xi: 15.5 bow of i: 12.0 tail of i: 19.0 gama_i0: 3.0 gama_i1: 1
731 : 4.0 gama_i1 + 1: 5.0 gama_i1 - gama_i0: 1.0 duration_time_i: 2.0 demand_i: 140.0 work
732 load_i: 140.0 work load gap_i: 0
733
734 Algorithm finished and the total CPU time: 341 s
735 End
736

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