

unknown

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80 cord_individual_obj[indivial_i,:] = [16. 4. 68. 72.]
81 cord_individual_obj[indivial_i,:] = [17. 4. 163. 167.]
82 cord_individual_obj[indivial_i,:] = [18. 4. 36. 40.]
83 cord_individual_obj[indivial_i,:] = [19. 5. 61. 66.]
84 cord_individual_obj[indivial_i,:] = [20. 3. 40. 43.]
85 cord_individual_obj[indivial_i,:] = [21. 5. 75. 80.]
86 cord_individual_obj[indivial_i,:] = [22. 4. 87. 91.]
87 cord_individual_obj[indivial_i,:] = [23. 5. 20. 25.]
88 cord_individual_obj[indivial_i,:] = [24. 4. 14. 18.]
89
90 min(cord_individual_obj[:,3]) = 18.0
91 historl_G_best_iter[iter,3] = 18.0
92 Begin iteration:
93
94 iter = 2
95 cord_individual_obj[indivial_i,:] = [ 0. 5. 67. 72.]
96 cord_individual_obj[indivial_i,:] = [ 1. 6. 47. 53.]
97 cord_individual_obj[indivial_i,:] = [ 2. 4. 52. 56.]
98 cord_individual_obj[indivial_i,:] = [ 3. 4. 37. 41.]
99 cord_individual_obj[indivial_i,:] = [ 4. 6. 38. 44.]
100 cord_individual_obj[indivial_i,:] = [ 5. 5. 52. 57.]
101 cord_individual_obj[indivial_i,:] = [ 6. 4. 30. 34.]
102 cord_individual_obj[indivial_i,:] = [ 7. 5. 51. 56.]
103 cord_individual_obj[indivial_i,:] = [ 8. 4. 98. 102.]
104 cord_individual_obj[indivial_i,:] = [ 9. 6. 59. 65.]
105 cord_individual_obj[indivial_i,:] = [10. 4. 18. 22.]
106 cord_individual_obj[indivial_i,:] = [11. 4. 88. 92.]
107 cord_individual_obj[indivial_i,:] = [12. 4. 61. 65.]
108 cord_individual_obj[indivial_i,:] = [13. 5. 35. 40.]
109 cord_individual_obj[indivial_i,:] = [14. 7. 28. 35.]
110 cord_individual_obj[indivial_i,:] = [15. 5. 45. 50.]
111 cord_individual_obj[indivial_i,:] = [16. 5. 111. 116.]
112 cord_individual_obj[indivial_i,:] = [17. 4. 14. 18.]
113 cord_individual_obj[indivial_i,:] = [18. 4. 35. 39.]
114 cord_individual_obj[indivial_i,:] = [19. 6. 68. 74.]
115 cord_individual_obj[indivial_i,:] = [20. 6. 45. 51.]
116 cord_individual_obj[indivial_i,:] = [21. 5. 63. 68.]
117 cord_individual_obj[indivial_i,:] = [22. 6. 80. 86.]
118 cord_individual_obj[indivial_i,:] = [23. 7. 25. 32.]
119 cord_individual_obj[indivial_i,:] = [24. 4. 53. 57.]
120
121 min(cord_individual_obj[:,3]) = 18.0
122 historl_G_best_iter[iter,3] = 18.0
123 Begin iteration:
124
125 iter = 3
126 cord_individual_obj[indivial_i,:] = [ 0. 5. 46. 51.]
127 cord_individual_obj[indivial_i,:] = [ 1. 5. 104. 109.]
128 cord_individual_obj[indivial_i,:] = [ 2. 6. 64. 70.]
129 cord_individual_obj[indivial_i,:] = [ 3. 5. 81. 86.]
130 cord_individual_obj[indivial_i,:] = [ 4. 4. 22. 26.]
131 cord_individual_obj[indivial_i,:] = [ 5. 4. 51. 55.]
132 cord_individual_obj[indivial_i,:] = [ 6. 4. 59. 63.]
133 cord_individual_obj[indivial_i,:] = [ 7. 5. 68. 73.]
134 cord_individual_obj[indivial_i,:] = [ 8. 4. 51. 55.]
135 cord_individual_obj[indivial_i,:] = [ 9. 5. 27. 32.]
136 cord_individual_obj[indivial_i,:] = [10. 4. 60. 64.]
137 cord_individual_obj[indivial_i,:] = [11. 5. 83. 88.]
138 cord_individual_obj[indivial_i,:] = [12. 4. 98. 102.]
139 cord_individual_obj[indivial_i,:] = [13. 6. 19. 25.]
140 cord_individual_obj[indivial_i,:] = [14. 4. 78. 82.]
141 cord_individual_obj[indivial_i,:] = [15. 7. 27. 34.]
142 cord_individual_obj[indivial_i,:] = [16. 4. 14. 18.]
143 cord_individual_obj[indivial_i,:] = [17. 5. 34. 39.]
144 cord_individual_obj[indivial_i,:] = [18. 4. 44. 48.]
145 cord_individual_obj[indivial_i,:] = [19. 4. 127. 131.]
146 cord_individual_obj[indivial_i,:] = [20. 4. 45. 49.]
147 cord_individual_obj[indivial_i,:] = [21. 4. 60. 64.]
148 cord_individual_obj[indivial_i,:] = [22. 5. 58. 63.]
149 cord_individual_obj[indivial_i,:] = [23. 6. 50. 56.]
150 cord_individual_obj[indivial_i,:] = [24. 6. 60. 66.]
151
152 min(cord_individual_obj[:,3]) = 18.0
153 historl_G_best_iter[iter,3] = 18.0
154 Begin iteration:
155
156 iter = 4
157 cord_individual_obj[indivial_i,:] = [ 0. 5. 35. 40.]
158 cord_individual_obj[indivial_i,:] = [ 1. 6. 69. 75.]
159 cord_individual_obj[indivial_i,:] = [ 2. 5. 36. 41.]
160 cord_individual_obj[indivial_i,:] = [ 3. 4. 103. 107.]
161 cord_individual_obj[indivial_i,:] = [ 4. 5. 89. 94.]
162 cord_individual_obj[indivial_i,:] = [ 5. 4. 41. 45.]
163 cord_individual_obj[indivial_i,:] = [ 6. 4. 71. 75.]

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164 cord_individual_obj[indivial_i,:] = [ 7. 5. 67. 72.]
165 cord_individual_obj[indivial_i,:] = [ 8. 5. 52. 57.]
166 cord_individual_obj[indivial_i,:] = [ 9. 6. 31. 37.]
167 cord_individual_obj[indivial_i,:] = [10. 5. 53. 58.]
168 cord_individual_obj[indivial_i,:] = [11. 4. 48. 52.]
169 cord_individual_obj[indivial_i,:] = [12. 4. 87. 91.]
170 cord_individual_obj[indivial_i,:] = [13. 5. 44. 49.]
171 cord_individual_obj[indivial_i,:] = [14. 5. 85. 90.]
172 cord_individual_obj[indivial_i,:] = [15. 6. 39. 45.]
173 cord_individual_obj[indivial_i,:] = [16. 5. 110. 115.]
174 cord_individual_obj[indivial_i,:] = [17. 3. 116. 119.]
175 cord_individual_obj[indivial_i,:] = [18. 5. 66. 71.]
176 cord_individual_obj[indivial_i,:] = [19. 4. 14. 18.]
177 cord_individual_obj[indivial_i,:] = [20. 4. 46. 50.]
178 cord_individual_obj[indivial_i,:] = [21. 5. 31. 36.]
179 cord_individual_obj[indivial_i,:] = [22. 6. 67. 73.]
180 cord_individual_obj[indivial_i,:] = [23. 5. 70. 75.]
181 cord_individual_obj[indivial_i,:] = [24. 4. 97. 101.]
182
183 min(cord_individual_obj[:,3]) = 18.0
184 historl_G_best_iter[iter,3] = 18.0
185 Begin iteration:
186
187 iter = 5
188 cord_individual_obj[indivial_i,:] = [ 0. 6. 68. 74.]
189 cord_individual_obj[indivial_i,:] = [ 1. 5. 102. 107.]
190 cord_individual_obj[indivial_i,:] = [ 2. 5. 111. 116.]
191 cord_individual_obj[indivial_i,:] = [ 3. 4. 114. 118.]
192 cord_individual_obj[indivial_i,:] = [ 4. 5. 88. 93.]
193 cord_individual_obj[indivial_i,:] = [ 5. 4. 45. 49.]
194 cord_individual_obj[indivial_i,:] = [ 6. 4. 112. 116.]
195 cord_individual_obj[indivial_i,:] = [ 7. 4. 42. 46.]
196 cord_individual_obj[indivial_i,:] = [ 8. 6. 30. 36.]
197 cord_individual_obj[indivial_i,:] = [ 9. 6. 13. 19.]
198 cord_individual_obj[indivial_i,:] = [10. 4. 57. 61.]
199 cord_individual_obj[indivial_i,:] = [11. 3. 107. 110.]
200 cord_individual_obj[indivial_i,:] = [12. 7. 63. 70.]
201 cord_individual_obj[indivial_i,:] = [13. 6. 44. 50.]
202 cord_individual_obj[indivial_i,:] = [14. 7. 64. 71.]
203 cord_individual_obj[indivial_i,:] = [15. 6. 37. 43.]
204 cord_individual_obj[indivial_i,:] = [16. 5. 94. 99.]
205 cord_individual_obj[indivial_i,:] = [17. 4. 14. 18.]
206 cord_individual_obj[indivial_i,:] = [18. 6. 55. 61.]
207 cord_individual_obj[indivial_i,:] = [19. 5. 54. 59.]
208 cord_individual_obj[indivial_i,:] = [20. 3. 47. 50.]
209 cord_individual_obj[indivial_i,:] = [21. 4. 37. 41.]
210 cord_individual_obj[indivial_i,:] = [22. 5. 49. 54.]
211 cord_individual_obj[indivial_i,:] = [23. 4. 39. 43.]
212 cord_individual_obj[indivial_i,:] = [24. 5. 64. 69.]
213
214 min(cord_individual_obj[:,3]) = 18.0
215 historl_G_best_iter[iter,3] = 18.0
216 Begin iteration:
217
218 iter = 6
219 cord_individual_obj[indivial_i,:] = [ 0. 5. 74. 79.]
220 cord_individual_obj[indivial_i,:] = [ 1. 6. 70. 76.]
221 cord_individual_obj[indivial_i,:] = [ 2. 5. 40. 45.]
222 cord_individual_obj[indivial_i,:] = [ 3. 4. 14. 18.]
223 cord_individual_obj[indivial_i,:] = [ 4. 5. 74. 79.]
224 cord_individual_obj[indivial_i,:] = [ 5. 4. 30. 34.]
225 cord_individual_obj[indivial_i,:] = [ 6. 6. 57. 63.]
226 cord_individual_obj[indivial_i,:] = [ 7. 4. 28. 32.]
227 cord_individual_obj[indivial_i,:] = [ 8. 4. 71. 75.]
228 cord_individual_obj[indivial_i,:] = [ 9. 7. 35. 42.]
229 cord_individual_obj[indivial_i,:] = [10. 4. 62. 66.]
230 cord_individual_obj[indivial_i,:] = [11. 4. 88. 92.]
231 cord_individual_obj[indivial_i,:] = [12. 5. 67. 72.]
232 cord_individual_obj[indivial_i,:] = [13. 5. 49. 54.]
233 cord_individual_obj[indivial_i,:] = [14. 4. 30. 34.]
234 cord_individual_obj[indivial_i,:] = [15. 7. 56. 63.]
235 cord_individual_obj[indivial_i,:] = [16. 4. 67. 71.]
236 cord_individual_obj[indivial_i,:] = [17. 6. 39. 45.]
237 cord_individual_obj[indivial_i,:] = [18. 7. 72. 79.]
238 cord_individual_obj[indivial_i,:] = [19. 5. 77. 82.]
239 cord_individual_obj[indivial_i,:] = [20. 4. 32. 36.]
240 cord_individual_obj[indivial_i,:] = [21. 6. 63. 69.]
241 cord_individual_obj[indivial_i,:] = [22. 6. 37. 43.]
242 cord_individual_obj[indivial_i,:] = [23. 4. 59. 63.]
243 cord_individual_obj[indivial_i,:] = [24. 5. 79. 84.]
244
245 min(cord_individual_obj[:,3]) = 18.0
246 historl_G_best_iter[iter,3] = 18.0
247 Begin iteration:

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248
249 iter = 7
250 cord_individual_obj[indivial_i, :] = [ 0.  5. 51. 56.]
251 cord_individual_obj[indivial_i, :] = [ 1.  5. 91. 96.]
252 cord_individual_obj[indivial_i, :] = [ 2.  7. 56. 63.]
253 cord_individual_obj[indivial_i, :] = [ 3.  5. 136. 141.]
254 cord_individual_obj[indivial_i, :] = [ 4.  4. 69. 73.]
255 cord_individual_obj[indivial_i, :] = [ 5.  6. 101. 107.]
256 cord_individual_obj[indivial_i, :] = [ 6.  4. 87. 91.]
257 cord_individual_obj[indivial_i, :] = [ 7.  6. 17. 23.]
258 cord_individual_obj[indivial_i, :] = [ 8.  4. 51. 55.]
259 cord_individual_obj[indivial_i, :] = [ 9.  5. 37. 42.]
260 cord_individual_obj[indivial_i, :] = [10.  6. 86. 92.]
261 cord_individual_obj[indivial_i, :] = [11.  4. 14. 18.]
262 cord_individual_obj[indivial_i, :] = [12.  5. 127. 132.]
263 cord_individual_obj[indivial_i, :] = [13.  3. 47. 50.]
264 cord_individual_obj[indivial_i, :] = [14.  5. 32. 37.]
265 cord_individual_obj[indivial_i, :] = [15.  4. 165. 169.]
266 cord_individual_obj[indivial_i, :] = [16.  4. 115. 119.]
267 cord_individual_obj[indivial_i, :] = [17.  6. 35. 41.]
268 cord_individual_obj[indivial_i, :] = [18.  5. 28. 33.]
269 cord_individual_obj[indivial_i, :] = [19.  5. 54. 59.]
270 cord_individual_obj[indivial_i, :] = [20.  6. 35. 41.]
271 cord_individual_obj[indivial_i, :] = [21.  4. 27. 31.]
272 cord_individual_obj[indivial_i, :] = [22.  5. 50. 55.]
273 cord_individual_obj[indivial_i, :] = [23.  5. 31. 36.]
274 cord_individual_obj[indivial_i, :] = [24.  4. 55. 59.]
275

276 min(cord_individual_obj[:, 3]) = 18.0
277 historl_G_best_iter[iter, 3] = 18.0
278 Begin iteration:
279
280 iter = 8
281 cord_individual_obj[indivial_i, :] = [ 0.  6. 66. 72.]
282 cord_individual_obj[indivial_i, :] = [ 1.  5. 66. 71.]
283 cord_individual_obj[indivial_i, :] = [ 2.  5. 53. 58.]
284 cord_individual_obj[indivial_i, :] = [ 3.  4. 60. 64.]
285 cord_individual_obj[indivial_i, :] = [ 4.  6. 86. 92.]
286 cord_individual_obj[indivial_i, :] = [ 5.  4. 47. 51.]
287 cord_individual_obj[indivial_i, :] = [ 6.  5. 54. 59.]
288 cord_individual_obj[indivial_i, :] = [ 7.  6. 63. 69.]
289 cord_individual_obj[indivial_i, :] = [ 8.  5. 44. 49.]
290 cord_individual_obj[indivial_i, :] = [ 9.  7. 47. 54.]
291 cord_individual_obj[indivial_i, :] = [10.  6. 60. 66.]
292 cord_individual_obj[indivial_i, :] = [11.  5. 90. 95.]
293 cord_individual_obj[indivial_i, :] = [12.  4. 87. 91.]
294 cord_individual_obj[indivial_i, :] = [13.  4. 45. 49.]
295 cord_individual_obj[indivial_i, :] = [14.  5. 38. 43.]
296 cord_individual_obj[indivial_i, :] = [15.  4. 14. 18.]
297 cord_individual_obj[indivial_i, :] = [16.  4. 71. 75.]
298 cord_individual_obj[indivial_i, :] = [17.  5. 33. 38.]
299 cord_individual_obj[indivial_i, :] = [18.  5. 65. 70.]
300 cord_individual_obj[indivial_i, :] = [19.  4. 45. 49.]
301 cord_individual_obj[indivial_i, :] = [20.  3. 26. 29.]
302 cord_individual_obj[indivial_i, :] = [21.  4. 36. 40.]
303 cord_individual_obj[indivial_i, :] = [22.  5. 28. 33.]
304 cord_individual_obj[indivial_i, :] = [23.  4. 39. 43.]
305 cord_individual_obj[indivial_i, :] = [24.  4. 146. 150.]
306

307 min(cord_individual_obj[:, 3]) = 18.0
308 historl_G_best_iter[iter, 3] = 18.0
309 Begin iteration:
310
311 iter = 9
312 cord_individual_obj[indivial_i, :] = [ 0.  5. 47. 52.]
313 cord_individual_obj[indivial_i, :] = [ 1.  4. 74. 78.]
314 cord_individual_obj[indivial_i, :] = [ 2.  5. 88. 93.]
315 cord_individual_obj[indivial_i, :] = [ 3.  4. 94. 98.]
316 cord_individual_obj[indivial_i, :] = [ 4.  5. 148. 153.]
317 cord_individual_obj[indivial_i, :] = [ 5.  5. 26. 31.]
318 cord_individual_obj[indivial_i, :] = [ 6.  4. 28. 32.]
319 cord_individual_obj[indivial_i, :] = [ 7.  5. 44. 49.]
320 cord_individual_obj[indivial_i, :] = [ 8.  5. 83. 88.]
321 cord_individual_obj[indivial_i, :] = [ 9.  6. 42. 48.]
322 cord_individual_obj[indivial_i, :] = [10.  5. 49. 54.]
323 cord_individual_obj[indivial_i, :] = [11.  4. 142. 146.]
324 cord_individual_obj[indivial_i, :] = [12.  4. 52. 56.]
325 cord_individual_obj[indivial_i, :] = [13.  6. 100. 106.]
326 cord_individual_obj[indivial_i, :] = [14.  6. 27. 33.]
327 cord_individual_obj[indivial_i, :] = [15.  6. 103. 109.]
328 cord_individual_obj[indivial_i, :] = [16.  4. 104. 108.]
329 cord_individual_obj[indivial_i, :] = [17.  6. 29. 35.]
330 cord_individual_obj[indivial_i, :] = [18.  5. 28. 33.]
331 cord_individual_obj[indivial_i, :] = [19.  5. 93. 98.]

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332 cord_individual_obj[indivial_i,:] = [20. 5. 64. 69.]
333 cord_individual_obj[indivial_i,:] = [21. 4. 43. 47.]
334 cord_individual_obj[indivial_i,:] = [22. 5. 50. 55.]
335 cord_individual_obj[indivial_i,:] = [23. 5. 38. 43.]
336 cord_individual_obj[indivial_i,:] = [24. 4. 14. 18.]
337
338 min(cord_individual_obj[:,3]) = 18.0
339 histol_G_best_iter[iter,3] = 18.0
340 Begin iteration:
341
342 iter = 10
343 cord_individual_obj[indivial_i,:] = [ 0. 7. 26. 33.]
344 cord_individual_obj[indivial_i,:] = [ 1. 5. 43. 48.]
345 cord_individual_obj[indivial_i,:] = [ 2. 4. 55. 59.]
346 cord_individual_obj[indivial_i,:] = [ 3. 5. 73. 78.]
347 cord_individual_obj[indivial_i,:] = [ 4. 4. 14. 18.]
348 cord_individual_obj[indivial_i,:] = [ 5. 4. 33. 37.]
349 cord_individual_obj[indivial_i,:] = [ 6. 6. 60. 66.]
350 cord_individual_obj[indivial_i,:] = [ 7. 5. 33. 38.]
351 cord_individual_obj[indivial_i,:] = [ 8. 5. 44. 49.]
352 cord_individual_obj[indivial_i,:] = [ 9. 7. 54. 61.]
353 cord_individual_obj[indivial_i,:] = [10. 6. 54. 60.]
354 cord_individual_obj[indivial_i,:] = [11. 4. 48. 52.]
355 cord_individual_obj[indivial_i,:] = [12. 4. 75. 79.]
356 cord_individual_obj[indivial_i,:] = [13. 5. 45. 50.]
357 cord_individual_obj[indivial_i,:] = [14. 4. 38. 42.]
358 cord_individual_obj[indivial_i,:] = [15. 6. 45. 51.]
359 cord_individual_obj[indivial_i,:] = [16. 4. 93. 97.]
360 cord_individual_obj[indivial_i,:] = [17. 4. 33. 37.]
361 cord_individual_obj[indivial_i,:] = [18. 5. 72. 77.]
362 cord_individual_obj[indivial_i,:] = [19. 5. 35. 40.]
363 cord_individual_obj[indivial_i,:] = [20. 5. 18. 23.]
364 cord_individual_obj[indivial_i,:] = [21. 5. 44. 49.]
365 cord_individual_obj[indivial_i,:] = [22. 5. 60. 65.]
366 cord_individual_obj[indivial_i,:] = [23. 4. 62. 66.]
367 cord_individual_obj[indivial_i,:] = [24. 4. 53. 57.]
368
369 min(cord_individual_obj[:,3]) = 18.0
370 histol_G_best_iter[iter,3] = 18.0
371 Begin iteration:
372
373 iter = 11
374 cord_individual_obj[indivial_i,:] = [ 0. 6. 30. 36.]
375 cord_individual_obj[indivial_i,:] = [ 1. 5. 99. 104.]
376 cord_individual_obj[indivial_i,:] = [ 2. 5. 57. 62.]
377 cord_individual_obj[indivial_i,:] = [ 3. 4. 114. 118.]
378 cord_individual_obj[indivial_i,:] = [ 4. 6. 76. 82.]
379 cord_individual_obj[indivial_i,:] = [ 5. 4. 30. 34.]
380 cord_individual_obj[indivial_i,:] = [ 6. 3. 122. 125.]
381 cord_individual_obj[indivial_i,:] = [ 7. 6. 56. 62.]
382 cord_individual_obj[indivial_i,:] = [ 8. 5. 100. 105.]
383 cord_individual_obj[indivial_i,:] = [ 9. 6. 62. 68.]
384 cord_individual_obj[indivial_i,:] = [10. 5. 106. 111.]
385 cord_individual_obj[indivial_i,:] = [11. 3. 111. 114.]
386 cord_individual_obj[indivial_i,:] = [12. 3. 52. 55.]
387 cord_individual_obj[indivial_i,:] = [13. 4. 66. 70.]
388 cord_individual_obj[indivial_i,:] = [14. 5. 27. 32.]
389 cord_individual_obj[indivial_i,:] = [15. 6. 52. 58.]
390 cord_individual_obj[indivial_i,:] = [16. 4. 14. 18.]
391 cord_individual_obj[indivial_i,:] = [17. 5. 37. 42.]
392 cord_individual_obj[indivial_i,:] = [18. 6. 55. 61.]
393 cord_individual_obj[indivial_i,:] = [19. 5. 90. 95.]
394 cord_individual_obj[indivial_i,:] = [20. 7. 63. 70.]
395 cord_individual_obj[indivial_i,:] = [21. 6. 88. 94.]
396 cord_individual_obj[indivial_i,:] = [22. 7. 50. 57.]
397 cord_individual_obj[indivial_i,:] = [23. 4. 127. 131.]
398 cord_individual_obj[indivial_i,:] = [24. 7. 69. 76.]
399
400 min(cord_individual_obj[:,3]) = 18.0
401 histol_G_best_iter[iter,3] = 18.0
402 Begin iteration:
403
404 iter = 12
405 cord_individual_obj[indivial_i,:] = [ 0. 6. 57. 63.]
406 cord_individual_obj[indivial_i,:] = [ 1. 5. 109. 114.]
407 cord_individual_obj[indivial_i,:] = [ 2. 5. 80. 85.]
408 cord_individual_obj[indivial_i,:] = [ 3. 5. 88. 93.]
409 cord_individual_obj[indivial_i,:] = [ 4. 5. 99. 104.]
410 cord_individual_obj[indivial_i,:] = [ 5. 5. 26. 31.]
411 cord_individual_obj[indivial_i,:] = [ 6. 5. 16. 21.]
412 cord_individual_obj[indivial_i,:] = [ 7. 6. 83. 89.]
413 cord_individual_obj[indivial_i,:] = [ 8. 5. 58. 63.]
414 cord_individual_obj[indivial_i,:] = [ 9. 7. 92. 99.]
415 cord_individual_obj[indivial_i,:] = [10. 5. 61. 66.]

```

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416 cord_individual_obj[indivial_i,:] = [11. 5. 70. 75.]
417 cord_individual_obj[indivial_i,:] = [12. 5. 90. 95.]
418 cord_individual_obj[indivial_i,:] = [13. 3. 57. 60.]
419 cord_individual_obj[indivial_i,:] = [14. 4. 70. 74.]
420 cord_individual_obj[indivial_i,:] = [15. 4. 12. 16.]
421 cord_individual_obj[indivial_i,:] = [16. 4. 92. 96.]
422 cord_individual_obj[indivial_i,:] = [17. 5. 76. 81.]
423 cord_individual_obj[indivial_i,:] = [18. 4. 35. 39.]
424 cord_individual_obj[indivial_i,:] = [19. 6. 41. 47.]
425 cord_individual_obj[indivial_i,:] = [20. 5. 58. 63.]
426 cord_individual_obj[indivial_i,:] = [21. 5. 63. 68.]
427 cord_individual_obj[indivial_i,:] = [22. 6. 60. 66.]
428 cord_individual_obj[indivial_i,:] = [23. 4. 14. 18.]
429 cord_individual_obj[indivial_i,:] = [24. 5. 62. 67.]
430
431 min(cord_individual_obj[:,3]) = 16.0
432 histol_G_best_iter[iter,3] = 16.0
433 Begin iteration:
434
435 iter = 13
436 cord_individual_obj[indivial_i,:] = [ 0. 6. 32. 38.]
437 cord_individual_obj[indivial_i,:] = [ 1. 4. 12. 16.]
438 cord_individual_obj[indivial_i,:] = [ 2. 6. 38. 44.]
439 cord_individual_obj[indivial_i,:] = [ 3. 4. 63. 67.]
440 cord_individual_obj[indivial_i,:] = [ 4. 5. 38. 43.]
441 cord_individual_obj[indivial_i,:] = [ 5. 5. 81. 86.]
442 cord_individual_obj[indivial_i,:] = [ 6. 6. 82. 88.]
443 cord_individual_obj[indivial_i,:] = [ 7. 5. 101. 106.]
444 cord_individual_obj[indivial_i,:] = [ 8. 5. 92. 97.]
445 cord_individual_obj[indivial_i,:] = [ 9. 6. 14. 20.]
446 cord_individual_obj[indivial_i,:] = [10. 4. 156. 160.]
447 cord_individual_obj[indivial_i,:] = [11. 5. 142. 147.]
448 cord_individual_obj[indivial_i,:] = [12. 5. 61. 66.]
449 cord_individual_obj[indivial_i,:] = [13. 5. 19. 24.]
450 cord_individual_obj[indivial_i,:] = [14. 5. 29. 34.]
451 cord_individual_obj[indivial_i,:] = [15. 5. 35. 40.]
452 cord_individual_obj[indivial_i,:] = [16. 5. 138. 143.]
453 cord_individual_obj[indivial_i,:] = [17. 4. 44. 48.]
454 cord_individual_obj[indivial_i,:] = [18. 5. 42. 47.]
455 cord_individual_obj[indivial_i,:] = [19. 6. 80. 86.]
456 cord_individual_obj[indivial_i,:] = [20. 6. 74. 80.]
457 cord_individual_obj[indivial_i,:] = [21. 4. 33. 37.]
458 cord_individual_obj[indivial_i,:] = [22. 6. 80. 86.]
459 cord_individual_obj[indivial_i,:] = [23. 5. 45. 50.]
460 cord_individual_obj[indivial_i,:] = [24. 5. 63. 68.]
461
462 min(cord_individual_obj[:,3]) = 16.0
463 histol_G_best_iter[iter,3] = 16.0
464 Begin iteration:
465
466 iter = 14
467 cord_individual_obj[indivial_i,:] = [ 0. 5. 29. 34.]
468 cord_individual_obj[indivial_i,:] = [ 1. 5. 60. 65.]
469 cord_individual_obj[indivial_i,:] = [ 2. 5. 64. 69.]
470 cord_individual_obj[indivial_i,:] = [ 3. 4. 61. 65.]
471 cord_individual_obj[indivial_i,:] = [ 4. 5. 28. 33.]
472 cord_individual_obj[indivial_i,:] = [ 5. 5. 58. 63.]
473 cord_individual_obj[indivial_i,:] = [ 6. 4. 88. 92.]
474 cord_individual_obj[indivial_i,:] = [ 7. 6. 53. 59.]
475 cord_individual_obj[indivial_i,:] = [ 8. 5. 99. 104.]
476 cord_individual_obj[indivial_i,:] = [ 9. 6. 52. 58.]
477 cord_individual_obj[indivial_i,:] = [10. 4. 12. 16.]
478 cord_individual_obj[indivial_i,:] = [11. 5. 48. 53.]
479 cord_individual_obj[indivial_i,:] = [12. 5. 29. 34.]
480 cord_individual_obj[indivial_i,:] = [13. 5. 45. 50.]
481 cord_individual_obj[indivial_i,:] = [14. 5. 35. 40.]
482 cord_individual_obj[indivial_i,:] = [15. 6. 63. 69.]
483 cord_individual_obj[indivial_i,:] = [16. 5. 101. 106.]
484 cord_individual_obj[indivial_i,:] = [17. 5. 44. 49.]
485 cord_individual_obj[indivial_i,:] = [18. 5. 39. 44.]
486 cord_individual_obj[indivial_i,:] = [19. 6. 38. 44.]
487 cord_individual_obj[indivial_i,:] = [20. 5. 74. 79.]
488 cord_individual_obj[indivial_i,:] = [21. 4. 34. 38.]
489 cord_individual_obj[indivial_i,:] = [22. 5. 72. 77.]
490 cord_individual_obj[indivial_i,:] = [23. 5. 65. 70.]
491 cord_individual_obj[indivial_i,:] = [24. 6. 120. 126.]
492
493 min(cord_individual_obj[:,3]) = 16.0
494 histol_G_best_iter[iter,3] = 16.0
495 Begin iteration:
496
497 iter = 15
498 cord_individual_obj[indivial_i,:] = [ 0. 7. 56. 63.]
499 cord_individual_obj[indivial_i,:] = [ 1. 5. 64. 69.]

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500 cord_individual_obj[indivial_i,:] = [ 2. 3. 101. 104.]
501 cord_individual_obj[indivial_i,:] = [ 3. 4. 42. 46.]
502 cord_individual_obj[indivial_i,:] = [ 4. 4. 58. 62.]
503 cord_individual_obj[indivial_i,:] = [ 5. 5. 170. 175.]
504 cord_individual_obj[indivial_i,:] = [ 6. 5. 47. 52.]
505 cord_individual_obj[indivial_i,:] = [ 7. 5. 78. 83.]
506 cord_individual_obj[indivial_i,:] = [ 8. 4. 119. 123.]
507 cord_individual_obj[indivial_i,:] = [ 9. 5. 58. 63.]
508 cord_individual_obj[indivial_i,:] = [10. 3. 86. 89.]
509 cord_individual_obj[indivial_i,:] = [11. 6. 93. 99.]
510 cord_individual_obj[indivial_i,:] = [12. 5. 74. 79.]
511 cord_individual_obj[indivial_i,:] = [13. 4. 152. 156.]
512 cord_individual_obj[indivial_i,:] = [14. 4. 78. 82.]
513 cord_individual_obj[indivial_i,:] = [15. 5. 87. 92.]
514 cord_individual_obj[indivial_i,:] = [16. 5. 99. 104.]
515 cord_individual_obj[indivial_i,:] = [17. 6. 60. 66.]
516 cord_individual_obj[indivial_i,:] = [18. 7. 90. 97.]
517 cord_individual_obj[indivial_i,:] = [19. 4. 29. 33.]
518 cord_individual_obj[indivial_i,:] = [20. 5. 68. 73.]
519 cord_individual_obj[indivial_i,:] = [21. 6. 74. 80.]
520 cord_individual_obj[indivial_i,:] = [22. 6. 52. 58.]
521 cord_individual_obj[indivial_i,:] = [23. 6. 144. 150.]
522 cord_individual_obj[indivial_i,:] = [24. 4. 12. 16.]
523
524 min(cord_individual_obj[:,3]) = 16.0
525 histol_G_best_iter[iter,3] = 16.0
526 Begin iteration:
527
528 iter = 16
529 cord_individual_obj[indivial_i,:] = [ 0. 5. 61. 66.]
530 cord_individual_obj[indivial_i,:] = [ 1. 5. 50. 55.]
531 cord_individual_obj[indivial_i,:] = [ 2. 5. 87. 92.]
532 cord_individual_obj[indivial_i,:] = [ 3. 4. 40. 44.]
533 cord_individual_obj[indivial_i,:] = [ 4. 4. 117. 121.]
534 cord_individual_obj[indivial_i,:] = [ 5. 4. 12. 16.]
535 cord_individual_obj[indivial_i,:] = [ 6. 6. 71. 77.]
536 cord_individual_obj[indivial_i,:] = [ 7. 5. 52. 57.]
537 cord_individual_obj[indivial_i,:] = [ 8. 5. 86. 91.]
538 cord_individual_obj[indivial_i,:] = [ 9. 5. 132. 137.]
539 cord_individual_obj[indivial_i,:] = [10. 5. 32. 37.]
540 cord_individual_obj[indivial_i,:] = [11. 4. 122. 126.]
541 cord_individual_obj[indivial_i,:] = [12. 7. 37. 44.]
542 cord_individual_obj[indivial_i,:] = [13. 5. 115. 120.]
543 cord_individual_obj[indivial_i,:] = [14. 6. 72. 78.]
544 cord_individual_obj[indivial_i,:] = [15. 6. 69. 75.]
545 cord_individual_obj[indivial_i,:] = [16. 5. 73. 78.]
546 cord_individual_obj[indivial_i,:] = [17. 5. 30. 35.]
547 cord_individual_obj[indivial_i,:] = [18. 5. 28. 33.]
548 cord_individual_obj[indivial_i,:] = [19. 5. 15. 20.]
549 cord_individual_obj[indivial_i,:] = [20. 5. 32. 37.]
550 cord_individual_obj[indivial_i,:] = [21. 4. 104. 108.]
551 cord_individual_obj[indivial_i,:] = [22. 5. 82. 87.]
552 cord_individual_obj[indivial_i,:] = [23. 4. 117. 121.]
553 cord_individual_obj[indivial_i,:] = [24. 4. 33. 37.]
554
555 min(cord_individual_obj[:,3]) = 16.0
556 histol_G_best_iter[iter,3] = 16.0
557 Begin iteration:
558
559 iter = 17
560 cord_individual_obj[indivial_i,:] = [ 0. 6. 34. 40.]
561 cord_individual_obj[indivial_i,:] = [ 1. 5. 44. 49.]
562 cord_individual_obj[indivial_i,:] = [ 2. 6. 61. 67.]
563 cord_individual_obj[indivial_i,:] = [ 3. 3. 71. 74.]
564 cord_individual_obj[indivial_i,:] = [ 4. 5. 32. 37.]
565 cord_individual_obj[indivial_i,:] = [ 5. 5. 84. 89.]
566 cord_individual_obj[indivial_i,:] = [ 6. 5. 73. 78.]
567 cord_individual_obj[indivial_i,:] = [ 7. 4. 26. 30.]
568 cord_individual_obj[indivial_i,:] = [ 8. 5. 100. 105.]
569 cord_individual_obj[indivial_i,:] = [ 9. 4. 12. 16.]
570 cord_individual_obj[indivial_i,:] = [10. 4. 41. 45.]
571 cord_individual_obj[indivial_i,:] = [11. 5. 18. 23.]
572 cord_individual_obj[indivial_i,:] = [12. 6. 29. 35.]
573 cord_individual_obj[indivial_i,:] = [13. 6. 49. 55.]
574 cord_individual_obj[indivial_i,:] = [14. 5. 28. 33.]
575 cord_individual_obj[indivial_i,:] = [15. 6. 57. 63.]
576 cord_individual_obj[indivial_i,:] = [16. 4. 110. 114.]
577 cord_individual_obj[indivial_i,:] = [17. 5. 26. 31.]
578 cord_individual_obj[indivial_i,:] = [18. 7. 55. 62.]
579 cord_individual_obj[indivial_i,:] = [19. 6. 72. 78.]
580 cord_individual_obj[indivial_i,:] = [20. 5. 60. 65.]
581 cord_individual_obj[indivial_i,:] = [21. 6. 66. 72.]
582 cord_individual_obj[indivial_i,:] = [22. 4. 27. 31.]
583 cord_individual_obj[indivial_i,:] = [23. 7. 49. 56.]

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unknown

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584     cord_individual_obj[indivial_i, :] = [24. 4. 74. 78.]  
585  
586     min(cord_individual_obj[:, 3]) = 16.0  
587     historl_G_best_iter[iter, 3] = 16.0  
588 Begin iteration:  
589  
590 iter = 18  
591     cord_individual_obj[indivial_i, :] = [ 0. 5. 36. 41.]  
592     cord_individual_obj[indivial_i, :] = [ 1. 5. 75. 80.]  
593     cord_individual_obj[indivial_i, :] = [ 2. 5. 71. 76.]  
594     cord_individual_obj[indivial_i, :] = [ 3. 4. 62. 66.]  
595     cord_individual_obj[indivial_i, :] = [ 4. 5. 36. 41.]  
596     cord_individual_obj[indivial_i, :] = [ 5. 4. 71. 75.]  
597     cord_individual_obj[indivial_i, :] = [ 6. 5. 24. 29.]  
598     cord_individual_obj[indivial_i, :] = [ 7. 4. 70. 74.]  
599     cord_individual_obj[indivial_i, :] = [ 8. 5. 99. 104.]  
600     cord_individual_obj[indivial_i, :] = [ 9. 6. 49. 55.]  
601     cord_individual_obj[indivial_i, :] = [10. 4. 39. 43.]  
602     cord_individual_obj[indivial_i, :] = [11. 5. 143. 148.]  
603     cord_individual_obj[indivial_i, :] = [12. 7. 39. 46.]  
604     cord_individual_obj[indivial_i, :] = [13. 5. 98. 103.]  
605     cord_individual_obj[indivial_i, :] = [14. 9. 47. 56.]  
606     cord_individual_obj[indivial_i, :] = [15. 5. 43. 48.]  
607     cord_individual_obj[indivial_i, :] = [16. 4. 12. 16.]  
608     cord_individual_obj[indivial_i, :] = [17. 6. 27. 33.]  
609     cord_individual_obj[indivial_i, :] = [18. 5. 65. 70.]  
610     cord_individual_obj[indivial_i, :] = [19. 6. 38. 44.]  
611     cord_individual_obj[indivial_i, :] = [20. 6. 29. 35.]  
612     cord_individual_obj[indivial_i, :] = [21. 4. 34. 38.]  
613     cord_individual_obj[indivial_i, :] = [22. 6. 74. 80.]  
614     cord_individual_obj[indivial_i, :] = [23. 5. 65. 70.]  
615     cord_individual_obj[indivial_i, :] = [24. 4. 33. 37.]  
616  
617     min(cord_individual_obj[:, 3]) = 16.0  
618     historl_G_best_iter[iter, 3] = 16.0  
619 Begin iteration:  
620  
621 iter = 19  
622     cord_individual_obj[indivial_i, :] = [ 0. 7. 66. 73.]  
623     cord_individual_obj[indivial_i, :] = [ 1. 5. 82. 87.]  
624     cord_individual_obj[indivial_i, :] = [ 2. 4. 55. 59.]  
625     cord_individual_obj[indivial_i, :] = [ 3. 4. 123. 127.]  
626     cord_individual_obj[indivial_i, :] = [ 4. 5. 34. 39.]  
627     cord_individual_obj[indivial_i, :] = [ 5. 5. 222. 227.]  
628     cord_individual_obj[indivial_i, :] = [ 6. 6. 37. 43.]  
629     cord_individual_obj[indivial_i, :] = [ 7. 5. 75. 80.]  
630     cord_individual_obj[indivial_i, :] = [ 8. 4. 119. 123.]  
631     cord_individual_obj[indivial_i, :] = [ 9. 5. 38. 43.]  
632     cord_individual_obj[indivial_i, :] = [10. 3. 88. 91.]  
633     cord_individual_obj[indivial_i, :] = [11. 4. 12. 16.]  
634     cord_individual_obj[indivial_i, :] = [12. 6. 39. 45.]  
635     cord_individual_obj[indivial_i, :] = [13. 5. 118. 123.]  
636     cord_individual_obj[indivial_i, :] = [14. 6. 103. 109.]  
637     cord_individual_obj[indivial_i, :] = [15. 5. 48. 53.]  
638     cord_individual_obj[indivial_i, :] = [16. 6. 105. 111.]  
639     cord_individual_obj[indivial_i, :] = [17. 5. 86. 91.]  
640     cord_individual_obj[indivial_i, :] = [18. 6. 16. 22.]  
641     cord_individual_obj[indivial_i, :] = [19. 6. 71. 77.]  
642     cord_individual_obj[indivial_i, :] = [20. 6. 63. 69.]  
643     cord_individual_obj[indivial_i, :] = [21. 7. 84. 91.]  
644     cord_individual_obj[indivial_i, :] = [22. 8. 66. 74.]  
645     cord_individual_obj[indivial_i, :] = [23. 5. 72. 77.]  
646     cord_individual_obj[indivial_i, :] = [24. 6. 53. 59.]  
647  
648     min(cord_individual_obj[:, 3]) = 16.0  
649     historl_G_best_iter[iter, 3] = 16.0  
650 Begin iteration:  
651  
652 iter = 20  
653     cord_individual_obj[indivial_i, :] = [ 0. 8. 53. 61.]  
654     cord_individual_obj[indivial_i, :] = [ 1. 4. 56. 60.]  
655     cord_individual_obj[indivial_i, :] = [ 2. 5. 24. 29.]  
656     cord_individual_obj[indivial_i, :] = [ 3. 5. 129. 134.]  
657     cord_individual_obj[indivial_i, :] = [ 4. 5. 107. 112.]  
658     cord_individual_obj[indivial_i, :] = [ 5. 4. 12. 16.]  
659     cord_individual_obj[indivial_i, :] = [ 6. 4. 38. 42.]  
660     cord_individual_obj[indivial_i, :] = [ 7. 6. 40. 46.]  
661     cord_individual_obj[indivial_i, :] = [ 8. 6. 38. 44.]  
662     cord_individual_obj[indivial_i, :] = [ 9. 5. 27. 32.]  
663     cord_individual_obj[indivial_i, :] = [10. 4. 68. 72.]  
664     cord_individual_obj[indivial_i, :] = [11. 5. 143. 148.]  
665     cord_individual_obj[indivial_i, :] = [12. 5. 38. 43.]  
666     cord_individual_obj[indivial_i, :] = [13. 5. 54. 59.]  
667     cord_individual_obj[indivial_i, :] = [14. 5. 37. 42.]
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668 cord_individual_obj[indivial_i,:] = [15. 6. 87. 93.]
669 cord_individual_obj[indivial_i,:] = [16. 5. 83. 88.]
670 cord_individual_obj[indivial_i,:] = [17. 6. 55. 61.]
671 cord_individual_obj[indivial_i,:] = [18. 4. 60. 64.]
672 cord_individual_obj[indivial_i,:] = [19. 6. 66. 72.]
673 cord_individual_obj[indivial_i,:] = [20. 5. 141. 146.]
674 cord_individual_obj[indivial_i,:] = [21. 5. 50. 55.]
675 cord_individual_obj[indivial_i,:] = [22. 4. 63. 67.]
676 cord_individual_obj[indivial_i,:] = [23. 6. 98. 104.]
677 cord_individual_obj[indivial_i,:] = [24. 6. 104. 110.]
678
679 min(cord_individual_obj[:, 3]) = 16.0
680 historl_G_best_iter[iter, 3] = 16.0
681 Iteration calculate over
682
683
684
685
686 All item are in Bin and:
687 Bin area = 1080
688 Real_area = 123.0
689 Proportion_of_area = 0.1138888888888889
690 BEST_CHROM =
691 berth: [10.5 17.5 2.5 24.5 1.5 9.5 17.5 5. 16. 21.5]
692 time: [2. 1. 0. 0. 2. 0. 0. 2. 2. 3.]
693 num_QC: [3. 4. 4. 2. 3. 4. 4. 4. 4. 4.]
694 Objective function values and some other indicators:
695 Obj0 = 4.00          Obj1 = 12.00          Obj0 + Obj1 = 16.00
696 Total movement of crane: 0.00
697 Total waiting time in berth position: 12.00
698 Total index of q during berthing: 494.00
699 Specific arrangement for each vessel:
700
    V_id: 0           li: 7.0           xi: 10.5           bow of i: 7.0           tail of i: 14.0           gama_i0: 2.0           gama_i1: 3
    .0                 gama_i1 + 1: 4.0      gama_i1 - gama_i0: 1.0      duration_time_i: 2.0      demand_i: 80.0       work
701 load_i: 80.0      work load gap_i: 0
    V_id: 1           li: 7.0           xi: 17.5           bow of i: 14.0           tail of i: 21.0           gama_i0: 1.0           gama_i1: 1
    .0                 gama_i1 + 1: 2.0      gama_i1 - gama_i0: 0.0      duration_time_i: 1.0      demand_i: 60.0       work
702 load_i: 60.0      work load gap_i: 0
    V_id: 2           li: 5.0           xi: 2.5            bow of i: 0.0           tail of i: 5.0           gama_i0: 0.0           gama_i1: 1.0
    .0                 gama_i1 + 1: 2.0      gama_i1 - gama_i0: 1.0      duration_time_i: 2.0      demand_i: 160.0      work load_i:
703 load_i: 160.0     work load gap_i: 0
    V_id: 3           li: 7.0           xi: 24.5            bow of i: 21.0           tail of i: 28.0           gama_i0: 0.0           gama_i1: 2
    .0                 gama_i1 + 1: 3.0      gama_i1 - gama_i0: 2.0      duration_time_i: 3.0      demand_i: 100.0      work
704 load_i: 100.0     work load gap_i: 0
    V_id: 4           li: 3.0           xi: 1.5            bow of i: 0.0           tail of i: 3.0           gama_i0: 2.0           gama_i1: 4.0
    .0                 gama_i1 + 1: 5.0      gama_i1 - gama_i0: 2.0      duration_time_i: 3.0      demand_i: 140.0      work load_i:
705 load_i: 140.0     work load gap_i: 0
    V_id: 5           li: 9.0           xi: 9.5            bow of i: 5.0           tail of i: 14.0           gama_i0: 0.0           gama_i1: 1.0
    .0                 gama_i1 + 1: 2.0      gama_i1 - gama_i0: 1.0      duration_time_i: 2.0      demand_i: 160.0      work load_i:
706 load_i: 160.0     work load gap_i: 0
    V_id: 6           li: 7.0           xi: 17.5            bow of i: 14.0           tail of i: 21.0           gama_i0: 0.0           gama_i1: 0
    .0                 gama_i1 + 1: 1.0      gama_i1 - gama_i0: 0.0      duration_time_i: 1.0      demand_i: 80.0       work
707 load_i: 80.0      work load gap_i: 0
    V_id: 7           li: 4.0           xi: 5.0            bow of i: 3.0           tail of i: 7.0           gama_i0: 2.0           gama_i1: 3.0
    .0                 gama_i1 + 1: 4.0      gama_i1 - gama_i0: 1.0      duration_time_i: 2.0      demand_i: 120.0      work load_i:
708 load_i: 120.0     work load gap_i: 0
    V_id: 8           li: 4.0           xi: 16.0            bow of i: 14.0           tail of i: 18.0           gama_i0: 2.0           gama_i1: 3
    .0                 gama_i1 + 1: 4.0      gama_i1 - gama_i0: 1.0      duration_time_i: 2.0      demand_i: 100.0      work
709 load_i: 100.0     work load gap_i: 0
    V_id: 9           li: 7.0           xi: 21.5            bow of i: 18.0           tail of i: 25.0           gama_i0: 3.0           gama_i1: 3
    .0                 gama_i1 + 1: 4.0      gama_i1 - gama_i0: 0.0      duration_time_i: 1.0      demand_i: 80.0       work
710 load_i: 80.0      work load gap_i: 0
711 Algorithm finished and the total CPU time: 281 s
712 End
713

```