

unknown

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80 cord_individual_obj[indivial_i,:] = [16. 5. 61. 66.]
81 cord_individual_obj[indivial_i,:] = [17. 5. 72. 77.]
82 cord_individual_obj[indivial_i,:] = [18. 5. 70. 75.]
83 cord_individual_obj[indivial_i,:] = [19. 6. 78. 84.]
84 cord_individual_obj[indivial_i,:] = [20. 6. 76. 82.]
85 cord_individual_obj[indivial_i,:] = [21. 5. 33. 38.]
86 cord_individual_obj[indivial_i,:] = [22. 6. 43. 49.]
87 cord_individual_obj[indivial_i,:] = [23. 7. 61. 68.]
88 cord_individual_obj[indivial_i,:] = [24. 7. 93. 100.]
89
90 min(cord_individual_obj[:,3]) = 25.0
91 historl_G_best_iter[iter, 3] = 25.0
92 Begin iteration:
93
94 iter = 2
95 cord_individual_obj[indivial_i,:] = [ 0. 8. 92. 100.]
96 cord_individual_obj[indivial_i,:] = [ 1. 6. 26. 32.]
97 cord_individual_obj[indivial_i,:] = [ 2. 6. 124. 130.]
98 cord_individual_obj[indivial_i,:] = [ 3. 5. 138. 143.]
99 cord_individual_obj[indivial_i,:] = [ 4. 6. 111. 117.]
100 cord_individual_obj[indivial_i,:] = [ 5. 4. 71. 75.]
101 cord_individual_obj[indivial_i,:] = [ 6. 6. 82. 88.]
102 cord_individual_obj[indivial_i,:] = [ 7. 5. 87. 92.]
103 cord_individual_obj[indivial_i,:] = [ 8. 7. 69. 76.]
104 cord_individual_obj[indivial_i,:] = [ 9. 6. 98. 104.]
105 cord_individual_obj[indivial_i,:] = [10. 5. 20. 25.]
106 cord_individual_obj[indivial_i,:] = [11. 5. 95. 100.]
107 cord_individual_obj[indivial_i,:] = [12. 6. 101. 107.]
108 cord_individual_obj[indivial_i,:] = [13. 8. 108. 116.]
109 cord_individual_obj[indivial_i,:] = [14. 8. 89. 97.]
110 cord_individual_obj[indivial_i,:] = [15. 4. 145. 149.]
111 cord_individual_obj[indivial_i,:] = [16. 7. 70. 77.]
112 cord_individual_obj[indivial_i,:] = [17. 4. 99. 103.]
113 cord_individual_obj[indivial_i,:] = [18. 6. 45. 51.]
114 cord_individual_obj[indivial_i,:] = [19. 4. 38. 42.]
115 cord_individual_obj[indivial_i,:] = [20. 6. 75. 81.]
116 cord_individual_obj[indivial_i,:] = [21. 5. 72. 77.]
117 cord_individual_obj[indivial_i,:] = [22. 7. 100. 107.]
118 cord_individual_obj[indivial_i,:] = [23. 5. 87. 92.]
119 cord_individual_obj[indivial_i,:] = [24. 5. 84. 89.]
120
121 min(cord_individual_obj[:,3]) = 25.0
122 historl_G_best_iter[iter, 3] = 25.0
123 Begin iteration:
124
125 iter = 3
126 cord_individual_obj[indivial_i,:] = [ 0. 5. 29. 34.]
127 cord_individual_obj[indivial_i,:] = [ 1. 5. 44. 49.]
128 cord_individual_obj[indivial_i,:] = [ 2. 7. 128. 135.]
129 cord_individual_obj[indivial_i,:] = [ 3. 6. 132. 138.]
130 cord_individual_obj[indivial_i,:] = [ 4. 5. 55. 60.]
131 cord_individual_obj[indivial_i,:] = [ 5. 4. 129. 133.]
132 cord_individual_obj[indivial_i,:] = [ 6. 7. 63. 70.]
133 cord_individual_obj[indivial_i,:] = [ 7. 6. 126. 132.]
134 cord_individual_obj[indivial_i,:] = [ 8. 6. 43. 49.]
135 cord_individual_obj[indivial_i,:] = [ 9. 5. 98. 103.]
136 cord_individual_obj[indivial_i,:] = [10. 4. 116. 120.]
137 cord_individual_obj[indivial_i,:] = [11. 5. 84. 89.]
138 cord_individual_obj[indivial_i,:] = [12. 6. 80. 86.]
139 cord_individual_obj[indivial_i,:] = [13. 7. 88. 95.]
140 cord_individual_obj[indivial_i,:] = [14. 6. 46. 52.]
141 cord_individual_obj[indivial_i,:] = [15. 5. 20. 25.]
142 cord_individual_obj[indivial_i,:] = [16. 5. 101. 106.]
143 cord_individual_obj[indivial_i,:] = [17. 4. 57. 61.]
144 cord_individual_obj[indivial_i,:] = [18. 7. 90. 97.]
145 cord_individual_obj[indivial_i,:] = [19. 5. 85. 90.]
146 cord_individual_obj[indivial_i,:] = [20. 5. 118. 123.]
147 cord_individual_obj[indivial_i,:] = [21. 5. 55. 60.]
148 cord_individual_obj[indivial_i,:] = [22. 9. 120. 129.]
149 cord_individual_obj[indivial_i,:] = [23. 7. 91. 98.]
150 cord_individual_obj[indivial_i,:] = [24. 5. 102. 107.]
151
152 min(cord_individual_obj[:,3]) = 25.0
153 historl_G_best_iter[iter, 3] = 25.0
154 Begin iteration:
155
156 iter = 4
157 cord_individual_obj[indivial_i,:] = [ 0. 6. 177. 183.]
158 cord_individual_obj[indivial_i,:] = [ 1. 5. 94. 99.]
159 cord_individual_obj[indivial_i,:] = [ 2. 6. 92. 98.]
160 cord_individual_obj[indivial_i,:] = [ 3. 5. 20. 25.]
161 cord_individual_obj[indivial_i,:] = [ 4. 7. 118. 125.]
162 cord_individual_obj[indivial_i,:] = [ 5. 7. 68. 75.]
163 cord_individual_obj[indivial_i,:] = [ 6. 5. 62. 67.]

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164 cord_individual_obj[indivial_i,:] = [ 7. 4. 88. 92.]
165 cord_individual_obj[indivial_i,:] = [ 8. 6. 99. 105.]
166 cord_individual_obj[indivial_i,:] = [ 9. 5. 80. 85.]
167 cord_individual_obj[indivial_i,:] = [ 10. 6. 121. 127.]
168 cord_individual_obj[indivial_i,:] = [ 11. 5. 117. 122.]
169 cord_individual_obj[indivial_i,:] = [12. 8. 17. 25.]
170 cord_individual_obj[indivial_i,:] = [13. 6. 46. 52.]
171 cord_individual_obj[indivial_i,:] = [14. 7. 84. 91.]
172 cord_individual_obj[indivial_i,:] = [15. 5. 53. 58.]
173 cord_individual_obj[indivial_i,:] = [16. 6. 69. 75.]
174 cord_individual_obj[indivial_i,:] = [17. 8. 89. 97.]
175 cord_individual_obj[indivial_i,:] = [18. 4. 85. 89.]
176 cord_individual_obj[indivial_i,:] = [19. 5. 36. 41.]
177 cord_individual_obj[indivial_i,:] = [20. 4. 34. 38.]
178 cord_individual_obj[indivial_i,:] = [21. 7. 77. 84.]
179 cord_individual_obj[indivial_i,:] = [22. 4. 72. 76.]
180 cord_individual_obj[indivial_i,:] = [23. 4. 57. 61.]
181 cord_individual_obj[indivial_i,:] = [24. 7. 46. 53.]
182
183 min(cord_individual_obj[:,3]) = 25.0
184 historl_G_best_iter[iter,3] = 25.0
185 Begin iteration:
186
187 iter = 5
188 cord_individual_obj[indivial_i,:] = [ 0. 5. 20. 25.]
189 cord_individual_obj[indivial_i,:] = [ 1. 5. 52. 57.]
190 cord_individual_obj[indivial_i,:] = [ 2. 6. 66. 72.]
191 cord_individual_obj[indivial_i,:] = [ 3. 7. 126. 133.]
192 cord_individual_obj[indivial_i,:] = [ 4. 6. 110. 116.]
193 cord_individual_obj[indivial_i,:] = [ 5. 5. 133. 138.]
194 cord_individual_obj[indivial_i,:] = [ 6. 6. 110. 116.]
195 cord_individual_obj[indivial_i,:] = [ 7. 6. 39. 45.]
196 cord_individual_obj[indivial_i,:] = [ 8. 6. 79. 85.]
197 cord_individual_obj[indivial_i,:] = [ 9. 5. 109. 114.]
198 cord_individual_obj[indivial_i,:] = [10. 4. 37. 41.]
199 cord_individual_obj[indivial_i,:] = [11. 5. 100. 105.]
200 cord_individual_obj[indivial_i,:] = [12. 7. 87. 94.]
201 cord_individual_obj[indivial_i,:] = [13. 7. 97. 104.]
202 cord_individual_obj[indivial_i,:] = [14. 5. 53. 58.]
203 cord_individual_obj[indivial_i,:] = [15. 6. 59. 65.]
204 cord_individual_obj[indivial_i,:] = [16. 5. 116. 121.]
205 cord_individual_obj[indivial_i,:] = [17. 6. 117. 123.]
206 cord_individual_obj[indivial_i,:] = [18. 5. 71. 76.]
207 cord_individual_obj[indivial_i,:] = [19. 6. 77. 83.]
208 cord_individual_obj[indivial_i,:] = [20. 3. 199. 202.]
209 cord_individual_obj[indivial_i,:] = [21. 5. 101. 106.]
210 cord_individual_obj[indivial_i,:] = [22. 4. 42. 46.]
211 cord_individual_obj[indivial_i,:] = [23. 6. 82. 88.]
212 cord_individual_obj[indivial_i,:] = [24. 7. 85. 92.]
213
214 min(cord_individual_obj[:,3]) = 25.0
215 historl_G_best_iter[iter,3] = 25.0
216 Begin iteration:
217
218 iter = 6
219 cord_individual_obj[indivial_i,:] = [ 0. 5. 55. 60.]
220 cord_individual_obj[indivial_i,:] = [ 1. 5. 141. 146.]
221 cord_individual_obj[indivial_i,:] = [ 2. 7. 73. 80.]
222 cord_individual_obj[indivial_i,:] = [ 3. 5. 136. 141.]
223 cord_individual_obj[indivial_i,:] = [ 4. 7. 112. 119.]
224 cord_individual_obj[indivial_i,:] = [ 5. 6. 159. 165.]
225 cord_individual_obj[indivial_i,:] = [ 6. 7. 63. 70.]
226 cord_individual_obj[indivial_i,:] = [ 7. 7. 52. 59.]
227 cord_individual_obj[indivial_i,:] = [ 8. 8. 57. 65.]
228 cord_individual_obj[indivial_i,:] = [ 9. 5. 159. 164.]
229 cord_individual_obj[indivial_i,:] = [10. 4. 80. 84.]
230 cord_individual_obj[indivial_i,:] = [11. 7. 114. 121.]
231 cord_individual_obj[indivial_i,:] = [12. 6. 44. 50.]
232 cord_individual_obj[indivial_i,:] = [13. 4. 106. 110.]
233 cord_individual_obj[indivial_i,:] = [14. 4. 103. 107.]
234 cord_individual_obj[indivial_i,:] = [15. 5. 137. 142.]
235 cord_individual_obj[indivial_i,:] = [16. 5. 101. 106.]
236 cord_individual_obj[indivial_i,:] = [17. 7. 101. 108.]
237 cord_individual_obj[indivial_i,:] = [18. 6. 81. 87.]
238 cord_individual_obj[indivial_i,:] = [19. 6. 88. 94.]
239 cord_individual_obj[indivial_i,:] = [20. 5. 20. 25.]
240 cord_individual_obj[indivial_i,:] = [21. 4. 93. 97.]
241 cord_individual_obj[indivial_i,:] = [22. 4. 42. 46.]
242 cord_individual_obj[indivial_i,:] = [23. 6. 62. 68.]
243 cord_individual_obj[indivial_i,:] = [24. 7. 111. 118.]
244
245 min(cord_individual_obj[:,3]) = 25.0
246 historl_G_best_iter[iter,3] = 25.0
247 Begin iteration:

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248
249 iter = 7
250 cord_individual_obj[indivial_i, :] = [ 0. 6. 167. 173.]
251 cord_individual_obj[indivial_i, :] = [ 1. 6. 27. 33.]
252 cord_individual_obj[indivial_i, :] = [ 2. 6. 87. 93.]
253 cord_individual_obj[indivial_i, :] = [ 3. 5. 127. 132.]
254 cord_individual_obj[indivial_i, :] = [ 4. 7. 101. 108.]
255 cord_individual_obj[indivial_i, :] = [ 5. 5. 20. 25.]
256 cord_individual_obj[indivial_i, :] = [ 6. 7. 134. 141.]
257 cord_individual_obj[indivial_i, :] = [ 7. 4. 56. 60.]
258 cord_individual_obj[indivial_i, :] = [ 8. 6. 71. 77.]
259 cord_individual_obj[indivial_i, :] = [ 9. 4. 175. 179.]
260 cord_individual_obj[indivial_i, :] = [10. 4. 69. 73.]
261 cord_individual_obj[indivial_i, :] = [11. 5. 116. 121.]
262 cord_individual_obj[indivial_i, :] = [12. 5. 104. 109.]
263 cord_individual_obj[indivial_i, :] = [13. 6. 85. 91.]
264 cord_individual_obj[indivial_i, :] = [14. 5. 53. 58.]
265 cord_individual_obj[indivial_i, :] = [15. 6. 78. 84.]
266 cord_individual_obj[indivial_i, :] = [16. 7. 78. 85.]
267 cord_individual_obj[indivial_i, :] = [17. 5. 151. 156.]
268 cord_individual_obj[indivial_i, :] = [18. 5. 40. 45.]
269 cord_individual_obj[indivial_i, :] = [19. 4. 75. 79.]
270 cord_individual_obj[indivial_i, :] = [20. 5. 123. 128.]
271 cord_individual_obj[indivial_i, :] = [21. 8. 91. 99.]
272 cord_individual_obj[indivial_i, :] = [22. 6. 89. 95.]
273 cord_individual_obj[indivial_i, :] = [23. 6. 66. 72.]
274 cord_individual_obj[indivial_i, :] = [24. 7. 107. 114.]
275

276 min(cord_individual_obj[:, 3]) = 25.0
277 historl_G_best_iter[iter, 3] = 25.0
278 Begin iteration:
279
280 iter = 8
281 cord_individual_obj[indivial_i, :] = [ 0. 5. 70. 75.]
282 cord_individual_obj[indivial_i, :] = [ 1. 3. 85. 88.]
283 cord_individual_obj[indivial_i, :] = [ 2. 4. 84. 88.]
284 cord_individual_obj[indivial_i, :] = [ 3. 6. 69. 75.]
285 cord_individual_obj[indivial_i, :] = [ 4. 9. 50. 59.]
286 cord_individual_obj[indivial_i, :] = [ 5. 6. 139. 145.]
287 cord_individual_obj[indivial_i, :] = [ 6. 8. 110. 118.]
288 cord_individual_obj[indivial_i, :] = [ 7. 6. 41. 47.]
289 cord_individual_obj[indivial_i, :] = [ 8. 6. 56. 62.]
290 cord_individual_obj[indivial_i, :] = [ 9. 5. 20. 25.]
291 cord_individual_obj[indivial_i, :] = [10. 5. 87. 92.]
292 cord_individual_obj[indivial_i, :] = [11. 6. 131. 137.]
293 cord_individual_obj[indivial_i, :] = [12. 5. 87. 92.]
294 cord_individual_obj[indivial_i, :] = [13. 4. 78. 82.]
295 cord_individual_obj[indivial_i, :] = [14. 5. 126. 131.]
296 cord_individual_obj[indivial_i, :] = [15. 10. 89. 99.]
297 cord_individual_obj[indivial_i, :] = [16. 5. 57. 62.]
298 cord_individual_obj[indivial_i, :] = [17. 5. 64. 69.]
299 cord_individual_obj[indivial_i, :] = [18. 6. 70. 76.]
300 cord_individual_obj[indivial_i, :] = [19. 7. 101. 108.]
301 cord_individual_obj[indivial_i, :] = [20. 5. 17. 22.]
302 cord_individual_obj[indivial_i, :] = [21. 8. 73. 81.]
303 cord_individual_obj[indivial_i, :] = [22. 6. 144. 150.]
304 cord_individual_obj[indivial_i, :] = [23. 8. 65. 73.]
305 cord_individual_obj[indivial_i, :] = [24. 5. 109. 114.]
306

307 min(cord_individual_obj[:, 3]) = 22.0
308 historl_G_best_iter[iter, 3] = 22.0
309 Begin iteration:
310
311 iter = 9
312 cord_individual_obj[indivial_i, :] = [ 0. 5. 53. 58.]
313 cord_individual_obj[indivial_i, :] = [ 1. 5. 111. 116.]
314 cord_individual_obj[indivial_i, :] = [ 2. 6. 48. 54.]
315 cord_individual_obj[indivial_i, :] = [ 3. 5. 49. 54.]
316 cord_individual_obj[indivial_i, :] = [ 4. 7. 82. 89.]
317 cord_individual_obj[indivial_i, :] = [ 5. 6. 74. 80.]
318 cord_individual_obj[indivial_i, :] = [ 6. 6. 46. 52.]
319 cord_individual_obj[indivial_i, :] = [ 7. 5. 39. 44.]
320 cord_individual_obj[indivial_i, :] = [ 8. 6. 57. 63.]
321 cord_individual_obj[indivial_i, :] = [ 9. 4. 153. 157.]
322 cord_individual_obj[indivial_i, :] = [10. 4. 99. 103.]
323 cord_individual_obj[indivial_i, :] = [11. 6. 68. 74.]
324 cord_individual_obj[indivial_i, :] = [12. 4. 113. 117.]
325 cord_individual_obj[indivial_i, :] = [13. 4. 66. 70.]
326 cord_individual_obj[indivial_i, :] = [14. 8. 43. 51.]
327 cord_individual_obj[indivial_i, :] = [15. 7. 61. 68.]
328 cord_individual_obj[indivial_i, :] = [16. 6. 87. 93.]
329 cord_individual_obj[indivial_i, :] = [17. 6. 50. 56.]
330 cord_individual_obj[indivial_i, :] = [18. 7. 78. 85.]
331 cord_individual_obj[indivial_i, :] = [19. 5. 100. 105.]

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332 cord_individual_obj[indivial_i, :] = [20. 5. 69. 74.]
333 cord_individual_obj[indivial_i, :] = [21. 8. 69. 77.]
334 cord_individual_obj[indivial_i, :] = [22. 5. 17. 22.]
335 cord_individual_obj[indivial_i, :] = [23. 4. 112. 116.]
336 cord_individual_obj[indivial_i, :] = [24. 9. 89. 98.]
337
338 min(cord_individual_obj[:, 3]) = 22.0
339 histol_G_best_iter[iter, 3] = 22.0
340 Begin iteration:
341
342 iter = 10
343 cord_individual_obj[indivial_i, :] = [ 0. 6. 69. 75.]
344 cord_individual_obj[indivial_i, :] = [ 1. 5. 25. 30.]
345 cord_individual_obj[indivial_i, :] = [ 2. 5. 138. 143.]
346 cord_individual_obj[indivial_i, :] = [ 3. 6. 135. 141.]
347 cord_individual_obj[indivial_i, :] = [ 4. 6. 88. 94.]
348 cord_individual_obj[indivial_i, :] = [ 5. 6. 116. 122.]
349 cord_individual_obj[indivial_i, :] = [ 6. 6. 82. 88.]
350 cord_individual_obj[indivial_i, :] = [ 7. 5. 96. 101.]
351 cord_individual_obj[indivial_i, :] = [ 8. 7. 43. 50.]
352 cord_individual_obj[indivial_i, :] = [ 9. 5. 17. 22.]
353 cord_individual_obj[indivial_i, :] = [10. 6. 59. 65.]
354 cord_individual_obj[indivial_i, :] = [11. 6. 105. 111.]
355 cord_individual_obj[indivial_i, :] = [12. 4. 100. 104.]
356 cord_individual_obj[indivial_i, :] = [13. 5. 64. 69.]
357 cord_individual_obj[indivial_i, :] = [14. 6. 81. 87.]
358 cord_individual_obj[indivial_i, :] = [15. 8. 70. 78.]
359 cord_individual_obj[indivial_i, :] = [16. 5. 122. 127.]
360 cord_individual_obj[indivial_i, :] = [17. 6. 112. 118.]
361 cord_individual_obj[indivial_i, :] = [18. 6. 68. 74.]
362 cord_individual_obj[indivial_i, :] = [19. 7. 74. 81.]
363 cord_individual_obj[indivial_i, :] = [20. 5. 33. 38.]
364 cord_individual_obj[indivial_i, :] = [21. 5. 47. 52.]
365 cord_individual_obj[indivial_i, :] = [22. 7. 86. 93.]
366 cord_individual_obj[indivial_i, :] = [23. 4. 38. 42.]
367 cord_individual_obj[indivial_i, :] = [24. 5. 69. 74.]
368
369 min(cord_individual_obj[:, 3]) = 22.0
370 histol_G_best_iter[iter, 3] = 22.0
371 Begin iteration:
372
373 iter = 11
374 cord_individual_obj[indivial_i, :] = [ 0. 4. 21. 25.]
375 cord_individual_obj[indivial_i, :] = [ 1. 4. 60. 64.]
376 cord_individual_obj[indivial_i, :] = [ 2. 5. 17. 22.]
377 cord_individual_obj[indivial_i, :] = [ 3. 7. 71. 78.]
378 cord_individual_obj[indivial_i, :] = [ 4. 5. 104. 109.]
379 cord_individual_obj[indivial_i, :] = [ 5. 8. 54. 62.]
380 cord_individual_obj[indivial_i, :] = [ 6. 7. 208. 215.]
381 cord_individual_obj[indivial_i, :] = [ 7. 6. 99. 105.]
382 cord_individual_obj[indivial_i, :] = [ 8. 5. 23. 28.]
383 cord_individual_obj[indivial_i, :] = [ 9. 4. 137. 141.]
384 cord_individual_obj[indivial_i, :] = [10. 4. 92. 96.]
385 cord_individual_obj[indivial_i, :] = [11. 11. 72. 83.]
386 cord_individual_obj[indivial_i, :] = [12. 6. 153. 159.]
387 cord_individual_obj[indivial_i, :] = [13. 4. 151. 155.]
388 cord_individual_obj[indivial_i, :] = [14. 6. 64. 70.]
389 cord_individual_obj[indivial_i, :] = [15. 6. 185. 191.]
390 cord_individual_obj[indivial_i, :] = [16. 6. 84. 90.]
391 cord_individual_obj[indivial_i, :] = [17. 4. 74. 78.]
392 cord_individual_obj[indivial_i, :] = [18. 7. 66. 73.]
393 cord_individual_obj[indivial_i, :] = [19. 8. 105. 113.]
394 cord_individual_obj[indivial_i, :] = [20. 5. 162. 167.]
395 cord_individual_obj[indivial_i, :] = [21. 6. 100. 106.]
396 cord_individual_obj[indivial_i, :] = [22. 6. 83. 89.]
397 cord_individual_obj[indivial_i, :] = [23. 5. 172. 177.]
398 cord_individual_obj[indivial_i, :] = [24. 7. 65. 72.]
399
400 min(cord_individual_obj[:, 3]) = 22.0
401 histol_G_best_iter[iter, 3] = 22.0
402 Begin iteration:
403
404 iter = 12
405 cord_individual_obj[indivial_i, :] = [ 0. 5. 21. 26.]
406 cord_individual_obj[indivial_i, :] = [ 1. 5. 87. 92.]
407 cord_individual_obj[indivial_i, :] = [ 2. 5. 95. 100.]
408 cord_individual_obj[indivial_i, :] = [ 3. 4. 108. 112.]
409 cord_individual_obj[indivial_i, :] = [ 4. 4. 102. 106.]
410 cord_individual_obj[indivial_i, :] = [ 5. 5. 112. 117.]
411 cord_individual_obj[indivial_i, :] = [ 6. 5. 17. 22.]
412 cord_individual_obj[indivial_i, :] = [ 7. 6. 50. 56.]
413 cord_individual_obj[indivial_i, :] = [ 8. 7. 106. 113.]
414 cord_individual_obj[indivial_i, :] = [ 9. 4. 73. 77.]
415 cord_individual_obj[indivial_i, :] = [10. 4. 91. 95.]

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416 cord_individual_obj[indivial_i,:] = [11. 8. 66. 74.]
417 cord_individual_obj[indivial_i,:] = [12. 5. 19. 24.]
418 cord_individual_obj[indivial_i,:] = [13. 6. 100. 106.]
419 cord_individual_obj[indivial_i,:] = [14. 6. 106. 112.]
420 cord_individual_obj[indivial_i,:] = [15. 5. 110. 115.]
421 cord_individual_obj[indivial_i,:] = [16. 6. 80. 86.]
422 cord_individual_obj[indivial_i,:] = [17. 6. 84. 90.]
423 cord_individual_obj[indivial_i,:] = [18. 6. 59. 65.]
424 cord_individual_obj[indivial_i,:] = [19. 5. 72. 77.]
425 cord_individual_obj[indivial_i,:] = [20. 4. 69. 73.]
426 cord_individual_obj[indivial_i,:] = [21. 5. 69. 74.]
427 cord_individual_obj[indivial_i,:] = [22. 6. 54. 60.]
428 cord_individual_obj[indivial_i,:] = [23. 5. 133. 138.]
429 cord_individual_obj[indivial_i,:] = [24. 5. 84. 89.]
430
431 min(cord_individual_obj[:,3]) = 22.0
432 histol_G_best_iter[iter,3] = 22.0
433 Begin iteration:
434
435 iter = 13
436 cord_individual_obj[indivial_i,:] = [0. 5. 47. 52.]
437 cord_individual_obj[indivial_i,:] = [1. 5. 51. 56.]
438 cord_individual_obj[indivial_i,:] = [2. 5. 68. 73.]
439 cord_individual_obj[indivial_i,:] = [3. 5. 183. 188.]
440 cord_individual_obj[indivial_i,:] = [4. 5. 93. 98.]
441 cord_individual_obj[indivial_i,:] = [5. 5. 110. 115.]
442 cord_individual_obj[indivial_i,:] = [6. 8. 108. 116.]
443 cord_individual_obj[indivial_i,:] = [7. 4. 126. 130.]
444 cord_individual_obj[indivial_i,:] = [8. 5. 100. 105.]
445 cord_individual_obj[indivial_i,:] = [9. 6. 59. 65.]
446 cord_individual_obj[indivial_i,:] = [10. 3. 131. 134.]
447 cord_individual_obj[indivial_i,:] = [11. 4. 92. 96.]
448 cord_individual_obj[indivial_i,:] = [12. 6. 154. 160.]
449 cord_individual_obj[indivial_i,:] = [13. 5. 87. 92.]
450 cord_individual_obj[indivial_i,:] = [14. 7. 47. 54.]
451 cord_individual_obj[indivial_i,:] = [15. 7. 109. 116.]
452 cord_individual_obj[indivial_i,:] = [16. 6. 130. 136.]
453 cord_individual_obj[indivial_i,:] = [17. 5. 111. 116.]
454 cord_individual_obj[indivial_i,:] = [18. 6. 83. 89.]
455 cord_individual_obj[indivial_i,:] = [19. 5. 73. 78.]
456 cord_individual_obj[indivial_i,:] = [20. 4. 81. 85.]
457 cord_individual_obj[indivial_i,:] = [21. 6. 90. 96.]
458 cord_individual_obj[indivial_i,:] = [22. 5. 55. 60.]
459 cord_individual_obj[indivial_i,:] = [23. 5. 17. 22.]
460 cord_individual_obj[indivial_i,:] = [24. 6. 95. 101.]
461
462 min(cord_individual_obj[:,3]) = 22.0
463 histol_G_best_iter[iter,3] = 22.0
464 Begin iteration:
465
466 iter = 14
467 cord_individual_obj[indivial_i,:] = [0. 5. 93. 98.]
468 cord_individual_obj[indivial_i,:] = [1. 5. 33. 38.]
469 cord_individual_obj[indivial_i,:] = [2. 5. 84. 89.]
470 cord_individual_obj[indivial_i,:] = [3. 5. 17. 22.]
471 cord_individual_obj[indivial_i,:] = [4. 6. 105. 111.]
472 cord_individual_obj[indivial_i,:] = [5. 5. 169. 174.]
473 cord_individual_obj[indivial_i,:] = [6. 7. 208. 215.]
474 cord_individual_obj[indivial_i,:] = [7. 6. 176. 182.]
475 cord_individual_obj[indivial_i,:] = [8. 6. 44. 50.]
476 cord_individual_obj[indivial_i,:] = [9. 5. 78. 83.]
477 cord_individual_obj[indivial_i,:] = [10. 5. 102. 107.]
478 cord_individual_obj[indivial_i,:] = [11. 5. 64. 69.]
479 cord_individual_obj[indivial_i,:] = [12. 4. 130. 134.]
480 cord_individual_obj[indivial_i,:] = [13. 5. 61. 66.]
481 cord_individual_obj[indivial_i,:] = [14. 6. 48. 54.]
482 cord_individual_obj[indivial_i,:] = [15. 5. 137. 142.]
483 cord_individual_obj[indivial_i,:] = [16. 5. 163. 168.]
484 cord_individual_obj[indivial_i,:] = [17. 4. 62. 66.]
485 cord_individual_obj[indivial_i,:] = [18. 7. 66. 73.]
486 cord_individual_obj[indivial_i,:] = [19. 6. 79. 85.]
487 cord_individual_obj[indivial_i,:] = [20. 5. 21. 26.]
488 cord_individual_obj[indivial_i,:] = [21. 7. 73. 80.]
489 cord_individual_obj[indivial_i,:] = [22. 7. 64. 71.]
490 cord_individual_obj[indivial_i,:] = [23. 5. 131. 136.]
491 cord_individual_obj[indivial_i,:] = [24. 6. 70. 76.]
492
493 min(cord_individual_obj[:,3]) = 22.0
494 histol_G_best_iter[iter,3] = 22.0
495 Begin iteration:
496
497 iter = 15
498 cord_individual_obj[indivial_i,:] = [0. 6. 26. 32.]
499 cord_individual_obj[indivial_i,:] = [1. 4. 66. 70.]

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500 cord_individual_obj[indivial_i,:] = [ 2. 6. 97. 103.]
501 cord_individual_obj[indivial_i,:] = [ 3. 6. 98. 104.]
502 cord_individual_obj[indivial_i,:] = [ 4. 4. 86. 90.]
503 cord_individual_obj[indivial_i,:] = [ 5. 9. 84. 93.]
504 cord_individual_obj[indivial_i,:] = [ 6. 5. 17. 22.]
505 cord_individual_obj[indivial_i,:] = [ 7. 9. 48. 57.]
506 cord_individual_obj[indivial_i,:] = [ 8. 6. 29. 35.]
507 cord_individual_obj[indivial_i,:] = [ 9. 5. 62. 67.]
508 cord_individual_obj[indivial_i,:] = [10. 4. 81. 85.]
509 cord_individual_obj[indivial_i,:] = [11. 6. 100. 106.]
510 cord_individual_obj[indivial_i,:] = [12. 7. 111. 118.]
511 cord_individual_obj[indivial_i,:] = [13. 6. 30. 36.]
512 cord_individual_obj[indivial_i,:] = [14. 6. 27. 33.]
513 cord_individual_obj[indivial_i,:] = [15. 4. 101. 105.]
514 cord_individual_obj[indivial_i,:] = [16. 7. 70. 77.]
515 cord_individual_obj[indivial_i,:] = [17. 6. 58. 64.]
516 cord_individual_obj[indivial_i,:] = [18. 4. 111. 115.]
517 cord_individual_obj[indivial_i,:] = [19. 5. 116. 121.]
518 cord_individual_obj[indivial_i,:] = [20. 6. 77. 83.]
519 cord_individual_obj[indivial_i,:] = [21. 6. 44. 50.]
520 cord_individual_obj[indivial_i,:] = [22. 6. 57. 63.]
521 cord_individual_obj[indivial_i,:] = [23. 5. 86. 91.]
522 cord_individual_obj[indivial_i,:] = [24. 6. 78. 84.]
523
524 min(cord_individual_obj[:, 3]) = 22.0
525 histort_G_best_iter[iter, 3] = 22.0
526 Begin iteration:
527
528 iter = 16
529 cord_individual_obj[indivial_i,:] = [ 0. 6. 49. 55.]
530 cord_individual_obj[indivial_i,:] = [ 1. 5. 97. 102.]
531 cord_individual_obj[indivial_i,:] = [ 2. 6. 91. 97.]
532 cord_individual_obj[indivial_i,:] = [ 3. 5. 107. 112.]
533 cord_individual_obj[indivial_i,:] = [ 4. 6. 141. 147.]
534 cord_individual_obj[indivial_i,:] = [ 5. 4. 84. 88.]
535 cord_individual_obj[indivial_i,:] = [ 6. 6. 105. 111.]
536 cord_individual_obj[indivial_i,:] = [ 7. 4. 157. 161.]
537 cord_individual_obj[indivial_i,:] = [ 8. 4. 114. 118.]
538 cord_individual_obj[indivial_i,:] = [ 9. 6. 83. 89.]
539 cord_individual_obj[indivial_i,:] = [10. 3. 131. 134.]
540 cord_individual_obj[indivial_i,:] = [11. 7. 65. 72.]
541 cord_individual_obj[indivial_i,:] = [12. 6. 37. 43.]
542 cord_individual_obj[indivial_i,:] = [13. 5. 67. 72.]
543 cord_individual_obj[indivial_i,:] = [14. 6. 38. 44.]
544 cord_individual_obj[indivial_i,:] = [15. 7. 122. 129.]
545 cord_individual_obj[indivial_i,:] = [16. 7. 91. 98.]
546 cord_individual_obj[indivial_i,:] = [17. 5. 143. 148.]
547 cord_individual_obj[indivial_i,:] = [18. 5. 71. 76.]
548 cord_individual_obj[indivial_i,:] = [19. 5. 17. 22.]
549 cord_individual_obj[indivial_i,:] = [20. 4. 91. 95.]
550 cord_individual_obj[indivial_i,:] = [21. 4. 104. 108.]
551 cord_individual_obj[indivial_i,:] = [22. 8. 71. 79.]
552 cord_individual_obj[indivial_i,:] = [23. 8. 133. 141.]
553 cord_individual_obj[indivial_i,:] = [24. 5. 117. 122.]
554
555 min(cord_individual_obj[:, 3]) = 22.0
556 histort_G_best_iter[iter, 3] = 22.0
557 Begin iteration:
558
559 iter = 17
560 cord_individual_obj[indivial_i,:] = [ 0. 6. 101. 107.]
561 cord_individual_obj[indivial_i,:] = [ 1. 5. 111. 116.]
562 cord_individual_obj[indivial_i,:] = [ 2. 7. 75. 82.]
563 cord_individual_obj[indivial_i,:] = [ 3. 4. 53. 57.]
564 cord_individual_obj[indivial_i,:] = [ 4. 6. 85. 91.]
565 cord_individual_obj[indivial_i,:] = [ 5. 7. 84. 91.]
566 cord_individual_obj[indivial_i,:] = [ 6. 6. 79. 85.]
567 cord_individual_obj[indivial_i,:] = [ 7. 5. 17. 22.]
568 cord_individual_obj[indivial_i,:] = [ 8. 6. 60. 66.]
569 cord_individual_obj[indivial_i,:] = [ 9. 4. 31. 35.]
570 cord_individual_obj[indivial_i,:] = [10. 4. 118. 122.]
571 cord_individual_obj[indivial_i,:] = [11. 7. 66. 73.]
572 cord_individual_obj[indivial_i,:] = [12. 6. 78. 84.]
573 cord_individual_obj[indivial_i,:] = [13. 6. 107. 113.]
574 cord_individual_obj[indivial_i,:] = [14. 7. 60. 67.]
575 cord_individual_obj[indivial_i,:] = [15. 5. 170. 175.]
576 cord_individual_obj[indivial_i,:] = [16. 8. 102. 110.]
577 cord_individual_obj[indivial_i,:] = [17. 6. 22. 28.]
578 cord_individual_obj[indivial_i,:] = [18. 6. 42. 48.]
579 cord_individual_obj[indivial_i,:] = [19. 7. 77. 84.]
580 cord_individual_obj[indivial_i,:] = [20. 5. 19. 24.]
581 cord_individual_obj[indivial_i,:] = [21. 6. 94. 100.]
582 cord_individual_obj[indivial_i,:] = [22. 5. 60. 65.]
583 cord_individual_obj[indivial_i,:] = [23. 4. 90. 94.]

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unknown

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584     cord_individual_obj[indivial_i, :] = [24. 4. 79. 83.]  
585  
586     min(cord_individual_obj[:, 3]) = 22.0  
587     historl_G_best_iter[iter, 3] = 22.0  
588 Begin iteration:  
589  
590 iter = 18  
591     cord_individual_obj[indivial_i, :] = [ 0. 8. 99. 107.]  
592     cord_individual_obj[indivial_i, :] = [ 1. 6. 164. 170.]  
593     cord_individual_obj[indivial_i, :] = [ 2. 6. 73. 79.]  
594     cord_individual_obj[indivial_i, :] = [ 3. 5. 54. 59.]  
595     cord_individual_obj[indivial_i, :] = [ 4. 5. 172. 177.]  
596     cord_individual_obj[indivial_i, :] = [ 5. 5. 173. 178.]  
597     cord_individual_obj[indivial_i, :] = [ 6. 7. 165. 172.]  
598     cord_individual_obj[indivial_i, :] = [ 7. 6. 117. 123.]  
599     cord_individual_obj[indivial_i, :] = [ 8. 5. 22. 27.]  
600     cord_individual_obj[indivial_i, :] = [ 9. 5. 88. 93.]  
601     cord_individual_obj[indivial_i, :] = [10. 5. 122. 127.]  
602     cord_individual_obj[indivial_i, :] = [11. 7. 83. 90.]  
603     cord_individual_obj[indivial_i, :] = [12. 6. 153. 159.]  
604     cord_individual_obj[indivial_i, :] = [13. 5. 61. 66.]  
605     cord_individual_obj[indivial_i, :] = [14. 6. 26. 32.]  
606     cord_individual_obj[indivial_i, :] = [15. 5. 17. 22.]  
607     cord_individual_obj[indivial_i, :] = [16. 7. 102. 109.]  
608     cord_individual_obj[indivial_i, :] = [17. 6. 83. 89.]  
609     cord_individual_obj[indivial_i, :] = [18. 8. 77. 85.]  
610     cord_individual_obj[indivial_i, :] = [19. 7. 104. 111.]  
611     cord_individual_obj[indivial_i, :] = [20. 6. 92. 98.]  
612     cord_individual_obj[indivial_i, :] = [21. 7. 110. 117.]  
613     cord_individual_obj[indivial_i, :] = [22. 5. 81. 86.]  
614     cord_individual_obj[indivial_i, :] = [23. 5. 109. 114.]  
615     cord_individual_obj[indivial_i, :] = [24. 3. 121. 124.]  
616  
617     min(cord_individual_obj[:, 3]) = 22.0  
618     historl_G_best_iter[iter, 3] = 22.0  
619 Begin iteration:  
620  
621 iter = 19  
622     cord_individual_obj[indivial_i, :] = [ 0. 5. 93. 98.]  
623     cord_individual_obj[indivial_i, :] = [ 1. 4. 156. 160.]  
624     cord_individual_obj[indivial_i, :] = [ 2. 7. 62. 69.]  
625     cord_individual_obj[indivial_i, :] = [ 3. 4. 102. 106.]  
626     cord_individual_obj[indivial_i, :] = [ 4. 6. 82. 88.]  
627     cord_individual_obj[indivial_i, :] = [ 5. 5. 17. 22.]  
628     cord_individual_obj[indivial_i, :] = [ 6. 6. 206. 212.]  
629     cord_individual_obj[indivial_i, :] = [ 7. 3. 209. 212.]  
630     cord_individual_obj[indivial_i, :] = [ 8. 5. 23. 28.]  
631     cord_individual_obj[indivial_i, :] = [ 9. 7. 108. 115.]  
632     cord_individual_obj[indivial_i, :] = [10. 4. 91. 95.]  
633     cord_individual_obj[indivial_i, :] = [11. 6. 128. 134.]  
634     cord_individual_obj[indivial_i, :] = [12. 6. 150. 156.]  
635     cord_individual_obj[indivial_i, :] = [13. 4. 67. 71.]  
636     cord_individual_obj[indivial_i, :] = [14. 6. 48. 54.]  
637     cord_individual_obj[indivial_i, :] = [15. 6. 184. 190.]  
638     cord_individual_obj[indivial_i, :] = [16. 4. 145. 149.]  
639     cord_individual_obj[indivial_i, :] = [17. 5. 80. 85.]  
640     cord_individual_obj[indivial_i, :] = [18. 5. 32. 37.]  
641     cord_individual_obj[indivial_i, :] = [19. 8. 106. 114.]  
642     cord_individual_obj[indivial_i, :] = [20. 4. 96. 100.]  
643     cord_individual_obj[indivial_i, :] = [21. 6. 69. 75.]  
644     cord_individual_obj[indivial_i, :] = [22. 6. 83. 89.]  
645     cord_individual_obj[indivial_i, :] = [23. 4. 93. 97.]  
646     cord_individual_obj[indivial_i, :] = [24. 4. 118. 122.]  
647  
648     min(cord_individual_obj[:, 3]) = 22.0  
649     historl_G_best_iter[iter, 3] = 22.0  
650 Begin iteration:  
651  
652 iter = 20  
653     cord_individual_obj[indivial_i, :] = [ 0. 8. 110. 118.]  
654     cord_individual_obj[indivial_i, :] = [ 1. 7. 81. 88.]  
655     cord_individual_obj[indivial_i, :] = [ 2. 5. 104. 109.]  
656     cord_individual_obj[indivial_i, :] = [ 3. 6. 112. 118.]  
657     cord_individual_obj[indivial_i, :] = [ 4. 4. 69. 73.]  
658     cord_individual_obj[indivial_i, :] = [ 5. 7. 53. 60.]  
659     cord_individual_obj[indivial_i, :] = [ 6. 5. 17. 22.]  
660     cord_individual_obj[indivial_i, :] = [ 7. 5. 40. 45.]  
661     cord_individual_obj[indivial_i, :] = [ 8. 6. 91. 97.]  
662     cord_individual_obj[indivial_i, :] = [ 9. 6. 81. 87.]  
663     cord_individual_obj[indivial_i, :] = [10. 5. 27. 32.]  
664     cord_individual_obj[indivial_i, :] = [11. 5. 61. 66.]  
665     cord_individual_obj[indivial_i, :] = [12. 5. 74. 79.]  
666     cord_individual_obj[indivial_i, :] = [13. 6. 27. 33.]  
667     cord_individual_obj[indivial_i, :] = [14. 5. 76. 81.]
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668 cord_individual_obj[indivial_i,:] = [ 15. 6. 96. 102.]
669 cord_individual_obj[indivial_i,:] = [16. 6. 90. 96.]
670 cord_individual_obj[indivial_i,:] = [17. 4. 40. 44.]
671 cord_individual_obj[indivial_i,:] = [18. 9. 46. 55.]
672 cord_individual_obj[indivial_i,:] = [ 19. 7. 117. 124.]
673 cord_individual_obj[indivial_i,:] = [20. 5. 49. 54.]
674 cord_individual_obj[indivial_i,:] = [21. 5. 74. 79.]
675 cord_individual_obj[indivial_i,:] = [22. 8. 53. 61.]
676 cord_individual_obj[indivial_i,:] = [ 23. 5. 103. 108.]
677 cord_individual_obj[indivial_i,:] = [ 24. 5. 98. 103.]
678
679 min(cord_individual_obj[:, 3]) = 22.0
680 historl_G_best_iter[iter, 3] = 22.0
681 Iteration calculate over
682
683
684
685
686 All item are in Bin and:
687 Bin area = 1080
688 Real_area = 110.0
689 Proportion_of_area = 0.10185185185185185
690 BEST_CHROM =
691     berth: [ 4.5 7.5 12. 18.5 13.5 10.5 26. 3. 10. 19.5 17. ]
692     time: [0. 2. 0. 0. 2. 2. 0. 1. 1. 1. 2.]
693     num_QC: [3. 3. 5. 4. 3. 2. 1. 3. 7. 3. 4.]
694 Objective function values and some other indicators:
695 Obj0 = 5.00          Obj1 = 17.00          Obj0 + Obj1 = 22.00
696 Total movement of crane: 4.00
697 Total waiting time in berth position: 11.00
698 Total index of q during berthing: 568.00
699 Specific arrangement for each vessel:
700
    V_id: 0           li: 9.0           xi: 4.5           bow of i: 0.0           tail of i: 9.0           gama_i0: 0.0           gama_i1: 0.0
    .0                 gama_i1 + 1: 1.0   gama_i1 - gama_i0: 0.0   duration_time_i: 1.0
    60.0               work load gap_i: 0
701
    V_id: 1           li: 3.0           xi: 7.5           bow of i: 6.0           tail of i: 9.0           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
    120.0              work load gap_i: 0
702
    V_id: 2           li: 6.0           xi: 12.0          bow of i: 9.0           tail of i: 15.0          gama_i0: 0.0           gama_i1: 0
    .0                 gama_i1 + 1: 1.0   gama_i1 - gama_i0: 0.0   duration_time_i: 1.0
    load_i: 100.0      work load gap_i: 0
703
    V_id: 3           li: 7.0           xi: 18.5          bow of i: 15.0          tail of i: 22.0          gama_i0: 0.0           gama_i1: 0
    .0                 gama_i1 + 1: 1.0   gama_i1 - gama_i0: 0.0   duration_time_i: 1.0
    load_i: 80.0       work load gap_i: 0
704
    V_id: 4           li: 3.0           xi: 13.5          bow of i: 12.0          tail of i: 15.0          gama_i0: 2.0           gama_i1: 3
    .0                 gama_i1 + 1: 4.0   gama_i1 - gama_i0: 1.0   duration_time_i: 2.0
    load_i: 100.0      work load gap_i: 0
705
    V_id: 5           li: 3.0           xi: 10.5          bow of i: 9.0           tail of i: 12.0          gama_i0: 2.0           gama_i1: 5
    .0                 gama_i1 + 1: 6.0   gama_i1 - gama_i0: 3.0   duration_time_i: 4.0
    load_i: 140.0      work load gap_i: 0
706
    V_id: 6           li: 4.0           xi: 26.0          bow of i: 24.0          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
    load_i: 60.0       work load gap_i: 0
707
    V_id: 7           li: 6.0           xi: 3.0           bow of i: 0.0           tail of i: 6.0           gama_i0: 1.0           gama_i1: 2.0
    .0                 gama_i1 + 1: 3.0   gama_i1 - gama_i0: 1.0   duration_time_i: 2.0
    100.0              work load gap_i: 0
708
    V_id: 8           li: 8.0           xi: 10.0          bow of i: 6.0           tail of i: 14.0          gama_i0: 1.0           gama_i1: 1
    .0                 gama_i1 + 1: 2.0   gama_i1 - gama_i0: 0.0   duration_time_i: 1.0
    load_i: 100.0      work load gap_i: 0
709
    V_id: 9           li: 9.0           xi: 19.5          bow of i: 15.0          tail of i: 24.0          gama_i0: 1.0           gama_i1: 1
    .0                 gama_i1 + 1: 2.0   gama_i1 - gama_i0: 0.0   duration_time_i: 1.0
    load_i: 60.0       work load gap_i: 0
710
    V_id: 10          li: 4.0           xi: 17.0          bow of i: 15.0          tail of i: 19.0          gama_i0: 2.0           gama_i1: 1
    : 3.0              gama_i1 + 1: 4.0   gama_i1 - gama_i0: 1.0   duration_time_i: 2.0
    load_i: 140.0      work load gap_i: 0
711
712 Algorithm finished and the total CPU time: 295 s
713 End
714

```