

unknown

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80 cord_individual_obj[indivial_i,:] = [16. 3. 1. 4.]
81 cord_individual_obj[indivial_i,:] = [17. 2. 15. 17.]
82 cord_individual_obj[indivial_i,:] = [18. 3. 26. 29.]
83 cord_individual_obj[indivial_i,:] = [19. 4. 13. 17.]
84 cord_individual_obj[indivial_i,:] = [20. 3. 2. 5.]
85 cord_individual_obj[indivial_i,:] = [21. 3. 2. 5.]
86 cord_individual_obj[indivial_i,:] = [22. 3. 2. 5.]
87 cord_individual_obj[indivial_i,:] = [23. 4. 2. 6.]
88 cord_individual_obj[indivial_i,:] = [24. 3. 2. 5.]
89
90 min(cord_individual_obj[:,3]) = 4.0
91 historl_G_best_iter[iter,3] = 4.0
92 Begin iteration:
93
94 iter = 2
95 cord_individual_obj[indivial_i,:] = [0. 3. 1. 4.]
96 cord_individual_obj[indivial_i,:] = [1. 3. 1. 4.]
97 cord_individual_obj[indivial_i,:] = [2. 3. 2. 5.]
98 cord_individual_obj[indivial_i,:] = [3. 3. 14. 17.]
99 cord_individual_obj[indivial_i,:] = [4. 2. 1. 3.]
100 cord_individual_obj[indivial_i,:] = [5. 3. 84. 87.]
101 cord_individual_obj[indivial_i,:] = [6. 3. 17. 20.]
102 cord_individual_obj[indivial_i,:] = [7. 3. 1. 4.]
103 cord_individual_obj[indivial_i,:] = [8. 3. 2. 5.]
104 cord_individual_obj[indivial_i,:] = [9. 4. 12. 16.]
105 cord_individual_obj[indivial_i,:] = [10. 3. 2. 5.]
106 cord_individual_obj[indivial_i,:] = [11. 3. 21. 24.]
107 cord_individual_obj[indivial_i,:] = [12. 2. 5. 7.]
108 cord_individual_obj[indivial_i,:] = [13. 3. 1. 4.]
109 cord_individual_obj[indivial_i,:] = [14. 3. 1. 4.]
110 cord_individual_obj[indivial_i,:] = [15. 3. 39. 42.]
111 cord_individual_obj[indivial_i,:] = [16. 3. 2. 5.]
112 cord_individual_obj[indivial_i,:] = [17. 3. 1. 4.]
113 cord_individual_obj[indivial_i,:] = [18. 4. 50. 54.]
114 cord_individual_obj[indivial_i,:] = [19. 3. 43. 46.]
115 cord_individual_obj[indivial_i,:] = [20. 3. 13. 16.]
116 cord_individual_obj[indivial_i,:] = [21. 3. 2. 5.]
117 cord_individual_obj[indivial_i,:] = [22. 3. 2. 5.]
118 cord_individual_obj[indivial_i,:] = [23. 4. 11. 15.]
119 cord_individual_obj[indivial_i,:] = [24. 3. 26. 29.]
120
121 min(cord_individual_obj[:,3]) = 3.0
122 historl_G_best_iter[iter,3] = 3.0
123 Begin iteration:
124
125 iter = 3
126 cord_individual_obj[indivial_i,:] = [0. 2. 1. 3.]
127 cord_individual_obj[indivial_i,:] = [1. 2. 1. 3.]
128 cord_individual_obj[indivial_i,:] = [2. 3. 1. 4.]
129 cord_individual_obj[indivial_i,:] = [3. 3. 2. 5.]
130 cord_individual_obj[indivial_i,:] = [4. 3. 19. 22.]
131 cord_individual_obj[indivial_i,:] = [5. 2. 1. 3.]
132 cord_individual_obj[indivial_i,:] = [6. 3. 21. 24.]
133 cord_individual_obj[indivial_i,:] = [7. 3. 32. 35.]
134 cord_individual_obj[indivial_i,:] = [8. 3. 1. 4.]
135 cord_individual_obj[indivial_i,:] = [9. 3. 1. 4.]
136 cord_individual_obj[indivial_i,:] = [10. 2. 31. 33.]
137 cord_individual_obj[indivial_i,:] = [11. 3. 18. 21.]
138 cord_individual_obj[indivial_i,:] = [12. 2. 1. 3.]
139 cord_individual_obj[indivial_i,:] = [13. 3. 1. 4.]
140 cord_individual_obj[indivial_i,:] = [14. 3. 1. 4.]
141 cord_individual_obj[indivial_i,:] = [15. 3. 32. 35.]
142 cord_individual_obj[indivial_i,:] = [16. 3. 1. 4.]
143 cord_individual_obj[indivial_i,:] = [17. 4. 19. 23.]
144 cord_individual_obj[indivial_i,:] = [18. 3. 1. 4.]
145 cord_individual_obj[indivial_i,:] = [19. 3. 2. 5.]
146 cord_individual_obj[indivial_i,:] = [20. 3. 1. 4.]
147 cord_individual_obj[indivial_i,:] = [21. 3. 1. 4.]
148 cord_individual_obj[indivial_i,:] = [22. 3. 1. 4.]
149 cord_individual_obj[indivial_i,:] = [23. 3. 1. 4.]
150 cord_individual_obj[indivial_i,:] = [24. 2. 1. 3.]
151
152 min(cord_individual_obj[:,3]) = 3.0
153 historl_G_best_iter[iter,3] = 3.0
154 Begin iteration:
155
156 iter = 4
157 cord_individual_obj[indivial_i,:] = [0. 2. 1. 3.]
158 cord_individual_obj[indivial_i,:] = [1. 3. 1. 4.]
159 cord_individual_obj[indivial_i,:] = [2. 3. 25. 28.]
160 cord_individual_obj[indivial_i,:] = [3. 3. 1. 4.]
161 cord_individual_obj[indivial_i,:] = [4. 3. 13. 16.]
162 cord_individual_obj[indivial_i,:] = [5. 3. 25. 28.]
163 cord_individual_obj[indivial_i,:] = [6. 2. 1. 3.]

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164 cord_individual_obj[indivial_i,:] = [7. 2. 1. 3.]
165 cord_individual_obj[indivial_i,:] = [8. 3. 1. 4.]
166 cord_individual_obj[indivial_i,:] = [9. 2. 1. 3.]
167 cord_individual_obj[indivial_i,:] = [10. 3. 5. 8.]
168 cord_individual_obj[indivial_i,:] = [11. 3. 25. 28.]
169 cord_individual_obj[indivial_i,:] = [12. 2. 1. 3.]
170 cord_individual_obj[indivial_i,:] = [13. 3. 1. 4.]
171 cord_individual_obj[indivial_i,:] = [14. 3. 1. 4.]
172 cord_individual_obj[indivial_i,:] = [15. 3. 46. 49.]
173 cord_individual_obj[indivial_i,:] = [16. 2. 1. 3.]
174 cord_individual_obj[indivial_i,:] = [17. 3. 1. 4.]
175 cord_individual_obj[indivial_i,:] = [18. 3. 1. 4.]
176 cord_individual_obj[indivial_i,:] = [19. 3. 2. 5.]
177 cord_individual_obj[indivial_i,:] = [20. 2. 1. 3.]
178 cord_individual_obj[indivial_i,:] = [21. 2. 1. 3.]
179 cord_individual_obj[indivial_i,:] = [22. 3. 1. 4.]
180 cord_individual_obj[indivial_i,:] = [23. 3. 1. 4.]
181 cord_individual_obj[indivial_i,:] = [24. 2. 25. 27.]
182
183 min(cord_individual_obj[:,3]) = 3.0
184 historl_G_best_iter[iter,3] = 3.0
185 Begin iteration:
186
187 iter = 5
188 cord_individual_obj[indivial_i,:] = [0. 3. 1. 4.]
189 cord_individual_obj[indivial_i,:] = [1. 2. 1. 3.]
190 cord_individual_obj[indivial_i,:] = [2. 2. 1. 3.]
191 cord_individual_obj[indivial_i,:] = [3. 3. 2. 5.]
192 cord_individual_obj[indivial_i,:] = [4. 2. 1. 3.]
193 cord_individual_obj[indivial_i,:] = [5. 3. 1. 4.]
194 cord_individual_obj[indivial_i,:] = [6. 2. 31. 33.]
195 cord_individual_obj[indivial_i,:] = [7. 3. 18. 21.]
196 cord_individual_obj[indivial_i,:] = [8. 3. 1. 4.]
197 cord_individual_obj[indivial_i,:] = [9. 2. 1. 3.]
198 cord_individual_obj[indivial_i,:] = [10. 3. 17. 20.]
199 cord_individual_obj[indivial_i,:] = [11. 3. 32. 35.]
200 cord_individual_obj[indivial_i,:] = [12. 3. 1. 4.]
201 cord_individual_obj[indivial_i,:] = [13. 3. 1. 4.]
202 cord_individual_obj[indivial_i,:] = [14. 3. 1. 4.]
203 cord_individual_obj[indivial_i,:] = [15. 2. 1. 3.]
204 cord_individual_obj[indivial_i,:] = [16. 3. 1. 4.]
205 cord_individual_obj[indivial_i,:] = [17. 2. 32. 34.]
206 cord_individual_obj[indivial_i,:] = [18. 3. 1. 4.]
207 cord_individual_obj[indivial_i,:] = [19. 3. 2. 5.]
208 cord_individual_obj[indivial_i,:] = [20. 3. 1. 4.]
209 cord_individual_obj[indivial_i,:] = [21. 3. 1. 4.]
210 cord_individual_obj[indivial_i,:] = [22. 3. 1. 4.]
211 cord_individual_obj[indivial_i,:] = [23. 3. 1. 4.]
212 cord_individual_obj[indivial_i,:] = [24. 3. 1. 4.]
213
214 min(cord_individual_obj[:,3]) = 3.0
215 historl_G_best_iter[iter,3] = 3.0
216 Begin iteration:
217
218 iter = 6
219 cord_individual_obj[indivial_i,:] = [0. 3. 1. 4.]
220 cord_individual_obj[indivial_i,:] = [1. 3. 1. 4.]
221 cord_individual_obj[indivial_i,:] = [2. 3. 13. 16.]
222 cord_individual_obj[indivial_i,:] = [3. 3. 2. 5.]
223 cord_individual_obj[indivial_i,:] = [4. 2. 41. 43.]
224 cord_individual_obj[indivial_i,:] = [5. 2. 41. 43.]
225 cord_individual_obj[indivial_i,:] = [6. 2. 6. 8.]
226 cord_individual_obj[indivial_i,:] = [7. 4. 19. 23.]
227 cord_individual_obj[indivial_i,:] = [8. 3. 1. 4.]
228 cord_individual_obj[indivial_i,:] = [9. 3. 1. 4.]
229 cord_individual_obj[indivial_i,:] = [10. 3. 1. 4.]
230 cord_individual_obj[indivial_i,:] = [11. 2. 1. 3.]
231 cord_individual_obj[indivial_i,:] = [12. 3. 1. 4.]
232 cord_individual_obj[indivial_i,:] = [13. 3. 1. 4.]
233 cord_individual_obj[indivial_i,:] = [14. 3. 1. 4.]
234 cord_individual_obj[indivial_i,:] = [15. 3. 1. 4.]
235 cord_individual_obj[indivial_i,:] = [16. 2. 1. 3.]
236 cord_individual_obj[indivial_i,:] = [17. 3. 1. 4.]
237 cord_individual_obj[indivial_i,:] = [18. 3. 1. 4.]
238 cord_individual_obj[indivial_i,:] = [19. 3. 1. 4.]
239 cord_individual_obj[indivial_i,:] = [20. 2. 1. 3.]
240 cord_individual_obj[indivial_i,:] = [21. 3. 1. 4.]
241 cord_individual_obj[indivial_i,:] = [22. 2. 1. 3.]
242 cord_individual_obj[indivial_i,:] = [23. 3. 1. 4.]
243 cord_individual_obj[indivial_i,:] = [24. 2. 25. 27.]
244
245 min(cord_individual_obj[:,3]) = 3.0
246 historl_G_best_iter[iter,3] = 3.0
247 Begin iteration:

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248
249 iter = 7
250 cord_individual_obj[indivial_i, :] = [0. 3. 2. 5.]
251 cord_individual_obj[indivial_i, :] = [1. 3. 1. 4.]
252 cord_individual_obj[indivial_i, :] = [2. 2. 21. 23.]
253 cord_individual_obj[indivial_i, :] = [3. 3. 1. 4.]
254 cord_individual_obj[indivial_i, :] = [4. 2. 1. 3.]
255 cord_individual_obj[indivial_i, :] = [5. 4. 27. 31.]
256 cord_individual_obj[indivial_i, :] = [6. 2. 31. 33.]
257 cord_individual_obj[indivial_i, :] = [7. 2. 61. 63.]
258 cord_individual_obj[indivial_i, :] = [8. 2. 1. 3.]
259 cord_individual_obj[indivial_i, :] = [9. 3. 1. 4.]
260 cord_individual_obj[indivial_i, :] = [10. 3. 13. 16.]
261 cord_individual_obj[indivial_i, :] = [11. 3. 1. 4.]
262 cord_individual_obj[indivial_i, :] = [12. 3. 13. 16.]
263 cord_individual_obj[indivial_i, :] = [13. 3. 1. 4.]
264 cord_individual_obj[indivial_i, :] = [14. 2. 1. 3.]
265 cord_individual_obj[indivial_i, :] = [15. 2. 1. 3.]
266 cord_individual_obj[indivial_i, :] = [16. 2. 1. 3.]
267 cord_individual_obj[indivial_i, :] = [17. 3. 1. 4.]
268 cord_individual_obj[indivial_i, :] = [18. 2. 1. 3.]
269 cord_individual_obj[indivial_i, :] = [19. 3. 1. 4.]
270 cord_individual_obj[indivial_i, :] = [20. 3. 1. 4.]
271 cord_individual_obj[indivial_i, :] = [21. 3. 1. 4.]
272 cord_individual_obj[indivial_i, :] = [22. 3. 1. 4.]
273 cord_individual_obj[indivial_i, :] = [23. 3. 1. 4.]
274 cord_individual_obj[indivial_i, :] = [24. 3. 30. 33.]
275

276 min(cord_individual_obj[:, 3]) = 3.0
277 historl_G_best_iter[iter, 3] = 3.0
278 Begin iteration:
279
280 iter = 8
281 cord_individual_obj[indivial_i, :] = [0. 2. 1. 3.]
282 cord_individual_obj[indivial_i, :] = [1. 2. 1. 3.]
283 cord_individual_obj[indivial_i, :] = [2. 3. 14. 17.]
284 cord_individual_obj[indivial_i, :] = [3. 2. 1. 3.]
285 cord_individual_obj[indivial_i, :] = [4. 2. 41. 43.]
286 cord_individual_obj[indivial_i, :] = [5. 3. 41. 44.]
287 cord_individual_obj[indivial_i, :] = [6. 2. 1. 3.]
288 cord_individual_obj[indivial_i, :] = [7. 2. 1. 3.]
289 cord_individual_obj[indivial_i, :] = [8. 3. 1. 4.]
290 cord_individual_obj[indivial_i, :] = [9. 2. 1. 3.]
291 cord_individual_obj[indivial_i, :] = [10. 3. 25. 28.]
292 cord_individual_obj[indivial_i, :] = [11. 3. 1. 4.]
293 cord_individual_obj[indivial_i, :] = [12. 3. 1. 4.]
294 cord_individual_obj[indivial_i, :] = [13. 3. 1. 4.]
295 cord_individual_obj[indivial_i, :] = [14. 3. 1. 4.]
296 cord_individual_obj[indivial_i, :] = [15. 3. 1. 4.]
297 cord_individual_obj[indivial_i, :] = [16. 3. 1. 4.]
298 cord_individual_obj[indivial_i, :] = [17. 3. 1. 4.]
299 cord_individual_obj[indivial_i, :] = [18. 3. 1. 4.]
300 cord_individual_obj[indivial_i, :] = [19. 3. 1. 4.]
301 cord_individual_obj[indivial_i, :] = [20. 3. 1. 4.]
302 cord_individual_obj[indivial_i, :] = [21. 3. 13. 16.]
303 cord_individual_obj[indivial_i, :] = [22. 2. 1. 3.]
304 cord_individual_obj[indivial_i, :] = [23. 3. 1. 4.]
305 cord_individual_obj[indivial_i, :] = [24. 2. 41. 43.]
306

307 min(cord_individual_obj[:, 3]) = 3.0
308 historl_G_best_iter[iter, 3] = 3.0
309 Begin iteration:
310
311 iter = 9
312 cord_individual_obj[indivial_i, :] = [0. 3. 2. 5.]
313 cord_individual_obj[indivial_i, :] = [1. 3. 1. 4.]
314 cord_individual_obj[indivial_i, :] = [2. 3. 32. 35.]
315 cord_individual_obj[indivial_i, :] = [3. 3. 1. 4.]
316 cord_individual_obj[indivial_i, :] = [4. 3. 13. 16.]
317 cord_individual_obj[indivial_i, :] = [5. 2. 1. 3.]
318 cord_individual_obj[indivial_i, :] = [6. 2. 10. 12.]
319 cord_individual_obj[indivial_i, :] = [7. 3. 17. 20.]
320 cord_individual_obj[indivial_i, :] = [8. 3. 1. 4.]
321 cord_individual_obj[indivial_i, :] = [9. 3. 1. 4.]
322 cord_individual_obj[indivial_i, :] = [10. 2. 5. 7.]
323 cord_individual_obj[indivial_i, :] = [11. 3. 25. 28.]
324 cord_individual_obj[indivial_i, :] = [12. 3. 25. 28.]
325 cord_individual_obj[indivial_i, :] = [13. 3. 1. 4.]
326 cord_individual_obj[indivial_i, :] = [14. 3. 1. 4.]
327 cord_individual_obj[indivial_i, :] = [15. 3. 32. 35.]
328 cord_individual_obj[indivial_i, :] = [16. 2. 1. 3.]
329 cord_individual_obj[indivial_i, :] = [17. 3. 2. 5.]
330 cord_individual_obj[indivial_i, :] = [18. 3. 1. 4.]
331 cord_individual_obj[indivial_i, :] = [19. 3. 1. 4.]

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332     cord_individual_obj[indivial_i, :] = [20. 3. 1. 4.]
333     cord_individual_obj[indivial_i, :] = [21. 3. 13. 16.]
334     cord_individual_obj[indivial_i, :] = [22. 3. 1. 4.]
335     cord_individual_obj[indivial_i, :] = [23. 3. 1. 4.]
336     cord_individual_obj[indivial_i, :] = [24. 3. 15. 18.]
337
338     min(cord_individual_obj[:, 3]) = 3.0
339     historl_G_best_iter[iter, 3] = 3.0
340 Begin iteration:
341
342 iter = 10
343     cord_individual_obj[indivial_i, :] = [0. 3. 2. 5.]
344     cord_individual_obj[indivial_i, :] = [1. 3. 2. 5.]
345     cord_individual_obj[indivial_i, :] = [2. 2. 1. 3.]
346     cord_individual_obj[indivial_i, :] = [3. 3. 1. 4.]
347     cord_individual_obj[indivial_i, :] = [4. 3. 2. 5.]
348     cord_individual_obj[indivial_i, :] = [5. 3. 41. 44.]
349     cord_individual_obj[indivial_i, :] = [6. 2. 1. 3.]
350     cord_individual_obj[indivial_i, :] = [7. 3. 1. 4.]
351     cord_individual_obj[indivial_i, :] = [8. 3. 1. 4.]
352     cord_individual_obj[indivial_i, :] = [9. 3. 1. 4.]
353     cord_individual_obj[indivial_i, :] = [10. 3. 32. 35.]
354     cord_individual_obj[indivial_i, :] = [11. 3. 2. 5.]
355     cord_individual_obj[indivial_i, :] = [12. 3. 1. 4.]
356     cord_individual_obj[indivial_i, :] = [13. 3. 1. 4.]
357     cord_individual_obj[indivial_i, :] = [14. 3. 1. 4.]
358     cord_individual_obj[indivial_i, :] = [15. 3. 1. 4.]
359     cord_individual_obj[indivial_i, :] = [16. 3. 1. 4.]
360     cord_individual_obj[indivial_i, :] = [17. 3. 1. 4.]
361     cord_individual_obj[indivial_i, :] = [18. 3. 1. 4.]
362     cord_individual_obj[indivial_i, :] = [19. 3. 2. 5.]
363     cord_individual_obj[indivial_i, :] = [20. 3. 1. 4.]
364     cord_individual_obj[indivial_i, :] = [21. 2. 1. 3.]
365     cord_individual_obj[indivial_i, :] = [22. 3. 1. 4.]
366     cord_individual_obj[indivial_i, :] = [23. 3. 1. 4.]
367     cord_individual_obj[indivial_i, :] = [24. 3. 1. 4.]
368
369     min(cord_individual_obj[:, 3]) = 3.0
370     historl_G_best_iter[iter, 3] = 3.0
371 Begin iteration:
372
373 iter = 11
374     cord_individual_obj[indivial_i, :] = [0. 3. 2. 5.]
375     cord_individual_obj[indivial_i, :] = [1. 3. 1. 4.]
376     cord_individual_obj[indivial_i, :] = [2. 3. 13. 16.]
377     cord_individual_obj[indivial_i, :] = [3. 3. 1. 4.]
378     cord_individual_obj[indivial_i, :] = [4. 3. 14. 17.]
379     cord_individual_obj[indivial_i, :] = [5. 2. 1. 3.]
380     cord_individual_obj[indivial_i, :] = [6. 2. 1. 3.]
381     cord_individual_obj[indivial_i, :] = [7. 3. 17. 20.]
382     cord_individual_obj[indivial_i, :] = [8. 3. 1. 4.]
383     cord_individual_obj[indivial_i, :] = [9. 3. 1. 4.]
384     cord_individual_obj[indivial_i, :] = [10. 3. 1. 4.]
385     cord_individual_obj[indivial_i, :] = [11. 3. 19. 22.]
386     cord_individual_obj[indivial_i, :] = [12. 3. 25. 28.]
387     cord_individual_obj[indivial_i, :] = [13. 3. 1. 4.]
388     cord_individual_obj[indivial_i, :] = [14. 3. 1. 4.]
389     cord_individual_obj[indivial_i, :] = [15. 3. 32. 35.]
390     cord_individual_obj[indivial_i, :] = [16. 3. 2. 5.]
391     cord_individual_obj[indivial_i, :] = [17. 2. 1. 3.]
392     cord_individual_obj[indivial_i, :] = [18. 3. 1. 4.]
393     cord_individual_obj[indivial_i, :] = [19. 3. 2. 5.]
394     cord_individual_obj[indivial_i, :] = [20. 3. 1. 4.]
395     cord_individual_obj[indivial_i, :] = [21. 2. 25. 27.]
396     cord_individual_obj[indivial_i, :] = [22. 3. 1. 4.]
397     cord_individual_obj[indivial_i, :] = [23. 3. 1. 4.]
398     cord_individual_obj[indivial_i, :] = [24. 2. 41. 43.]
399
400     min(cord_individual_obj[:, 3]) = 3.0
401     historl_G_best_iter[iter, 3] = 3.0
402 Begin iteration:
403
404 iter = 12
405     cord_individual_obj[indivial_i, :] = [0. 3. 2. 5.]
406     cord_individual_obj[indivial_i, :] = [1. 2. 2. 4.]
407     cord_individual_obj[indivial_i, :] = [2. 3. 13. 16.]
408     cord_individual_obj[indivial_i, :] = [3. 3. 2. 5.]
409     cord_individual_obj[indivial_i, :] = [4. 3. 2. 5.]
410     cord_individual_obj[indivial_i, :] = [5. 3. 41. 44.]
411     cord_individual_obj[indivial_i, :] = [6. 2. 1. 3.]
412     cord_individual_obj[indivial_i, :] = [7. 3. 1. 4.]
413     cord_individual_obj[indivial_i, :] = [8. 3. 1. 4.]
414     cord_individual_obj[indivial_i, :] = [9. 3. 1. 4.]
415     cord_individual_obj[indivial_i, :] = [10. 3. 18. 21.]

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416 cord_individual_obj[indivial_i,:] = [11. 3. 2. 5.]
417 cord_individual_obj[indivial_i,:] = [12. 3. 1. 4.]
418 cord_individual_obj[indivial_i,:] = [13. 3. 1. 4.]
419 cord_individual_obj[indivial_i,:] = [14. 2. 1. 3.]
420 cord_individual_obj[indivial_i,:] = [15. 3. 1. 4.]
421 cord_individual_obj[indivial_i,:] = [16. 2. 1. 3.]
422 cord_individual_obj[indivial_i,:] = [17. 2. 2. 4.]
423 cord_individual_obj[indivial_i,:] = [18. 3. 1. 4.]
424 cord_individual_obj[indivial_i,:] = [19. 2. 2. 4.]
425 cord_individual_obj[indivial_i,:] = [20. 3. 1. 4.]
426 cord_individual_obj[indivial_i,:] = [21. 3. 1. 4.]
427 cord_individual_obj[indivial_i,:] = [22. 3. 1. 4.]
428 cord_individual_obj[indivial_i,:] = [23. 3. 2. 5.]
429 cord_individual_obj[indivial_i,:] = [24. 2. 1. 3.]
430
431 min(cord_individual_obj[:,3]) = 3.0
432 histol_G_best_iter[iter,3] = 3.0
433 Begin iteration:
434
435 iter = 13
436 cord_individual_obj[indivial_i,:] = [0. 3. 1. 4.]
437 cord_individual_obj[indivial_i,:] = [1. 2. 1. 3.]
438 cord_individual_obj[indivial_i,:] = [2. 4. 7. 11.]
439 cord_individual_obj[indivial_i,:] = [3. 3. 26. 29.]
440 cord_individual_obj[indivial_i,:] = [4. 3. 1. 4.]
441 cord_individual_obj[indivial_i,:] = [5. 2. 1. 3.]
442 cord_individual_obj[indivial_i,:] = [6. 2. 1. 3.]
443 cord_individual_obj[indivial_i,:] = [7. 3. 2. 5.]
444 cord_individual_obj[indivial_i,:] = [8. 3. 1. 4.]
445 cord_individual_obj[indivial_i,:] = [9. 3. 1. 4.]
446 cord_individual_obj[indivial_i,:] = [10. 3. 1. 4.]
447 cord_individual_obj[indivial_i,:] = [11. 3. 1. 4.]
448 cord_individual_obj[indivial_i,:] = [12. 3. 1. 4.]
449 cord_individual_obj[indivial_i,:] = [13. 3. 1. 4.]
450 cord_individual_obj[indivial_i,:] = [14. 3. 1. 4.]
451 cord_individual_obj[indivial_i,:] = [15. 3. 1. 4.]
452 cord_individual_obj[indivial_i,:] = [16. 3. 1. 4.]
453 cord_individual_obj[indivial_i,:] = [17. 2. 1. 3.]
454 cord_individual_obj[indivial_i,:] = [18. 3. 1. 4.]
455 cord_individual_obj[indivial_i,:] = [19. 3. 1. 4.]
456 cord_individual_obj[indivial_i,:] = [20. 3. 34. 37.]
457 cord_individual_obj[indivial_i,:] = [21. 3. 7. 10.]
458 cord_individual_obj[indivial_i,:] = [22. 3. 2. 5.]
459 cord_individual_obj[indivial_i,:] = [23. 3. 2. 5.]
460 cord_individual_obj[indivial_i,:] = [24. 3. 1. 4.]
461
462 min(cord_individual_obj[:,3]) = 3.0
463 histol_G_best_iter[iter,3] = 3.0
464 Begin iteration:
465
466 iter = 14
467 cord_individual_obj[indivial_i,:] = [0. 3. 1. 4.]
468 cord_individual_obj[indivial_i,:] = [1. 2. 1. 3.]
469 cord_individual_obj[indivial_i,:] = [2. 3. 42. 45.]
470 cord_individual_obj[indivial_i,:] = [3. 3. 2. 5.]
471 cord_individual_obj[indivial_i,:] = [4. 3. 25. 28.]
472 cord_individual_obj[indivial_i,:] = [5. 3. 41. 44.]
473 cord_individual_obj[indivial_i,:] = [6. 3. 1. 4.]
474 cord_individual_obj[indivial_i,:] = [7. 3. 25. 28.]
475 cord_individual_obj[indivial_i,:] = [8. 3. 41. 44.]
476 cord_individual_obj[indivial_i,:] = [9. 3. 2. 5.]
477 cord_individual_obj[indivial_i,:] = [10. 3. 1. 4.]
478 cord_individual_obj[indivial_i,:] = [11. 3. 1. 4.]
479 cord_individual_obj[indivial_i,:] = [12. 3. 50. 53.]
480 cord_individual_obj[indivial_i,:] = [13. 3. 1. 4.]
481 cord_individual_obj[indivial_i,:] = [14. 3. 1. 4.]
482 cord_individual_obj[indivial_i,:] = [15. 3. 42. 45.]
483 cord_individual_obj[indivial_i,:] = [16. 2. 1. 3.]
484 cord_individual_obj[indivial_i,:] = [17. 2. 1. 3.]
485 cord_individual_obj[indivial_i,:] = [18. 3. 2. 5.]
486 cord_individual_obj[indivial_i,:] = [19. 3. 1. 4.]
487 cord_individual_obj[indivial_i,:] = [20. 2. 1. 3.]
488 cord_individual_obj[indivial_i,:] = [21. 3. 41. 44.]
489 cord_individual_obj[indivial_i,:] = [22. 3. 2. 5.]
490 cord_individual_obj[indivial_i,:] = [23. 3. 1. 4.]
491 cord_individual_obj[indivial_i,:] = [24. 2. 25. 27.]
492
493 min(cord_individual_obj[:,3]) = 3.0
494 histol_G_best_iter[iter,3] = 3.0
495 Begin iteration:
496
497 iter = 15
498 cord_individual_obj[indivial_i,:] = [0. 3. 1. 4.]
499 cord_individual_obj[indivial_i,:] = [1. 3. 1. 4.]

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500 cord_individual_obj[indivial_i, :] = [2. 3. 1. 4.]
501 cord_individual_obj[indivial_i, :] = [3. 3. 1. 4.]
502 cord_individual_obj[indivial_i, :] = [4. 2. 1. 3.]
503 cord_individual_obj[indivial_i, :] = [5. 3. 1. 4.]
504 cord_individual_obj[indivial_i, :] = [6. 2. 1. 3.]
505 cord_individual_obj[indivial_i, :] = [7. 3. 31. 34.]
506 cord_individual_obj[indivial_i, :] = [8. 3. 1. 4.]
507 cord_individual_obj[indivial_i, :] = [9. 3. 1. 4.]
508 cord_individual_obj[indivial_i, :] = [10. 3. 41. 44.]
509 cord_individual_obj[indivial_i, :] = [11. 3. 18. 21.]
510 cord_individual_obj[indivial_i, :] = [12. 2. 1. 3.]
511 cord_individual_obj[indivial_i, :] = [13. 3. 1. 4.]
512 cord_individual_obj[indivial_i, :] = [14. 3. 1. 4.]
513 cord_individual_obj[indivial_i, :] = [15. 3. 1. 4.]
514 cord_individual_obj[indivial_i, :] = [16. 3. 1. 4.]
515 cord_individual_obj[indivial_i, :] = [17. 3. 1. 4.]
516 cord_individual_obj[indivial_i, :] = [18. 3. 1. 4.]
517 cord_individual_obj[indivial_i, :] = [19. 3. 1. 4.]
518 cord_individual_obj[indivial_i, :] = [20. 2. 27. 29.]
519 cord_individual_obj[indivial_i, :] = [21. 2. 1. 3.]
520 cord_individual_obj[indivial_i, :] = [22. 3. 1. 4.]
521 cord_individual_obj[indivial_i, :] = [23. 2. 1. 3.]
522 cord_individual_obj[indivial_i, :] = [24. 2. 1. 3.]
523
524 min(cord_individual_obj[:, 3]) = 3.0
525 histol_G_best_iter[iter, 3] = 3.0
526 Begin iteration:
527
528 iter = 16
529 cord_individual_obj[indivial_i, :] = [0. 3. 1. 4.]
530 cord_individual_obj[indivial_i, :] = [1. 3. 1. 4.]
531 cord_individual_obj[indivial_i, :] = [2. 2. 2. 4.]
532 cord_individual_obj[indivial_i, :] = [3. 2. 20. 22.]
533 cord_individual_obj[indivial_i, :] = [4. 3. 19. 22.]
534 cord_individual_obj[indivial_i, :] = [5. 2. 1. 3.]
535 cord_individual_obj[indivial_i, :] = [6. 2. 1. 3.]
536 cord_individual_obj[indivial_i, :] = [7. 3. 1. 4.]
537 cord_individual_obj[indivial_i, :] = [8. 3. 1. 4.]
538 cord_individual_obj[indivial_i, :] = [9. 2. 2. 4.]
539 cord_individual_obj[indivial_i, :] = [10. 2. 1. 3.]
540 cord_individual_obj[indivial_i, :] = [11. 3. 31. 34.]
541 cord_individual_obj[indivial_i, :] = [12. 3. 5. 8.]
542 cord_individual_obj[indivial_i, :] = [13. 3. 1. 4.]
543 cord_individual_obj[indivial_i, :] = [14. 3. 1. 4.]
544 cord_individual_obj[indivial_i, :] = [15. 2. 1. 3.]
545 cord_individual_obj[indivial_i, :] = [16. 2. 1. 3.]
546 cord_individual_obj[indivial_i, :] = [17. 2. 1. 3.]
547 cord_individual_obj[indivial_i, :] = [18. 3. 2. 5.]
548 cord_individual_obj[indivial_i, :] = [19. 3. 2. 5.]
549 cord_individual_obj[indivial_i, :] = [20. 3. 101. 104.]
550 cord_individual_obj[indivial_i, :] = [21. 3. 1. 4.]
551 cord_individual_obj[indivial_i, :] = [22. 2. 2. 4.]
552 cord_individual_obj[indivial_i, :] = [23. 3. 1. 4.]
553 cord_individual_obj[indivial_i, :] = [24. 3. 1. 4.]
554
555 min(cord_individual_obj[:, 3]) = 3.0
556 histol_G_best_iter[iter, 3] = 3.0
557 Begin iteration:
558
559 iter = 17
560 cord_individual_obj[indivial_i, :] = [0. 3. 1. 4.]
561 cord_individual_obj[indivial_i, :] = [1. 3. 1. 4.]
562 cord_individual_obj[indivial_i, :] = [2. 3. 25. 28.]
563 cord_individual_obj[indivial_i, :] = [3. 3. 2. 5.]
564 cord_individual_obj[indivial_i, :] = [4. 3. 13. 16.]
565 cord_individual_obj[indivial_i, :] = [5. 3. 25. 28.]
566 cord_individual_obj[indivial_i, :] = [6. 2. 1. 3.]
567 cord_individual_obj[indivial_i, :] = [7. 3. 9. 12.]
568 cord_individual_obj[indivial_i, :] = [8. 3. 1. 4.]
569 cord_individual_obj[indivial_i, :] = [9. 3. 1. 4.]
570 cord_individual_obj[indivial_i, :] = [10. 3. 1. 4.]
571 cord_individual_obj[indivial_i, :] = [11. 3. 25. 28.]
572 cord_individual_obj[indivial_i, :] = [12. 2. 61. 63.]
573 cord_individual_obj[indivial_i, :] = [13. 3. 1. 4.]
574 cord_individual_obj[indivial_i, :] = [14. 3. 1. 4.]
575 cord_individual_obj[indivial_i, :] = [15. 3. 1. 4.]
576 cord_individual_obj[indivial_i, :] = [16. 2. 1. 3.]
577 cord_individual_obj[indivial_i, :] = [17. 3. 1. 4.]
578 cord_individual_obj[indivial_i, :] = [18. 3. 1. 4.]
579 cord_individual_obj[indivial_i, :] = [19. 3. 1. 4.]
580 cord_individual_obj[indivial_i, :] = [20. 2. 1. 3.]
581 cord_individual_obj[indivial_i, :] = [21. 3. 1. 4.]
582 cord_individual_obj[indivial_i, :] = [22. 2. 1. 3.]
583 cord_individual_obj[indivial_i, :] = [23. 3. 1. 4.]

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unknown

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584     cord_individual_obj[indivial_i, :] = [24. 2. 25. 27.]  
585  
586     min(cord_individual_obj[:, 3]) = 3.0  
587     historl_G_best_iter[iter, 3] = 3.0  
588 Begin iteration:  
589  
590 iter = 18  
591     cord_individual_obj[indivial_i, :] = [0. 3. 1. 4.]  
592     cord_individual_obj[indivial_i, :] = [1. 3. 1. 4.]  
593     cord_individual_obj[indivial_i, :] = [2. 3. 1. 4.]  
594     cord_individual_obj[indivial_i, :] = [3. 3. 1. 4.]  
595     cord_individual_obj[indivial_i, :] = [4. 3. 1. 4.]  
596     cord_individual_obj[indivial_i, :] = [5. 3. 1. 4.]  
597     cord_individual_obj[indivial_i, :] = [6. 2. 28. 30.]  
598     cord_individual_obj[indivial_i, :] = [7. 3. 20. 23.]  
599     cord_individual_obj[indivial_i, :] = [8. 3. 1. 4.]  
600     cord_individual_obj[indivial_i, :] = [9. 3. 1. 4.]  
601     cord_individual_obj[indivial_i, :] = [10. 3. 22. 25.]  
602     cord_individual_obj[indivial_i, :] = [11. 3. 1. 4.]  
603     cord_individual_obj[indivial_i, :] = [12. 2. 1. 3.]  
604     cord_individual_obj[indivial_i, :] = [13. 3. 1. 4.]  
605     cord_individual_obj[indivial_i, :] = [14. 3. 1. 4.]  
606     cord_individual_obj[indivial_i, :] = [15. 3. 1. 4.]  
607     cord_individual_obj[indivial_i, :] = [16. 2. 1. 3.]  
608     cord_individual_obj[indivial_i, :] = [17. 3. 1. 4.]  
609     cord_individual_obj[indivial_i, :] = [18. 4. 16. 20.]  
610     cord_individual_obj[indivial_i, :] = [19. 3. 5. 8.]  
611     cord_individual_obj[indivial_i, :] = [20. 3. 10. 13.]  
612     cord_individual_obj[indivial_i, :] = [21. 3. 1. 4.]  
613     cord_individual_obj[indivial_i, :] = [22. 3. 1. 4.]  
614     cord_individual_obj[indivial_i, :] = [23. 3. 10. 13.]  
615     cord_individual_obj[indivial_i, :] = [24. 2. 1. 3.]  
616  
617     min(cord_individual_obj[:, 3]) = 3.0  
618     historl_G_best_iter[iter, 3] = 3.0  
619 Begin iteration:  
620  
621 iter = 19  
622     cord_individual_obj[indivial_i, :] = [0. 3. 1. 4.]  
623     cord_individual_obj[indivial_i, :] = [1. 3. 1. 4.]  
624     cord_individual_obj[indivial_i, :] = [2. 3. 1. 4.]  
625     cord_individual_obj[indivial_i, :] = [3. 3. 1. 4.]  
626     cord_individual_obj[indivial_i, :] = [4. 3. 1. 4.]  
627     cord_individual_obj[indivial_i, :] = [5. 3. 1. 4.]  
628     cord_individual_obj[indivial_i, :] = [6. 2. 1. 3.]  
629     cord_individual_obj[indivial_i, :] = [7. 2. 31. 33.]  
630     cord_individual_obj[indivial_i, :] = [8. 3. 1. 4.]  
631     cord_individual_obj[indivial_i, :] = [9. 3. 1. 4.]  
632     cord_individual_obj[indivial_i, :] = [10. 3. 1. 4.]  
633     cord_individual_obj[indivial_i, :] = [11. 3. 1. 4.]  
634     cord_individual_obj[indivial_i, :] = [12. 3. 1. 4.]  
635     cord_individual_obj[indivial_i, :] = [13. 3. 1. 4.]  
636     cord_individual_obj[indivial_i, :] = [14. 3. 1. 4.]  
637     cord_individual_obj[indivial_i, :] = [15. 3. 1. 4.]  
638     cord_individual_obj[indivial_i, :] = [16. 2. 1. 3.]  
639     cord_individual_obj[indivial_i, :] = [17. 3. 1. 4.]  
640     cord_individual_obj[indivial_i, :] = [18. 3. 1. 4.]  
641     cord_individual_obj[indivial_i, :] = [19. 3. 5. 8.]  
642     cord_individual_obj[indivial_i, :] = [20. 3. 10. 13.]  
643     cord_individual_obj[indivial_i, :] = [21. 3. 1. 4.]  
644     cord_individual_obj[indivial_i, :] = [22. 3. 1. 4.]  
645     cord_individual_obj[indivial_i, :] = [23. 3. 1. 4.]  
646     cord_individual_obj[indivial_i, :] = [24. 3. 1. 4.]  
647  
648     min(cord_individual_obj[:, 3]) = 3.0  
649     historl_G_best_iter[iter, 3] = 3.0  
650 Begin iteration:  
651  
652 iter = 20  
653     cord_individual_obj[indivial_i, :] = [0. 2. 1. 3.]  
654     cord_individual_obj[indivial_i, :] = [1. 2. 1. 3.]  
655     cord_individual_obj[indivial_i, :] = [2. 3. 1. 4.]  
656     cord_individual_obj[indivial_i, :] = [3. 3. 1. 4.]  
657     cord_individual_obj[indivial_i, :] = [4. 3. 1. 4.]  
658     cord_individual_obj[indivial_i, :] = [5. 2. 1. 3.]  
659     cord_individual_obj[indivial_i, :] = [6. 2. 28. 30.]  
660     cord_individual_obj[indivial_i, :] = [7. 2. 1. 3.]  
661     cord_individual_obj[indivial_i, :] = [8. 3. 1. 4.]  
662     cord_individual_obj[indivial_i, :] = [9. 3. 1. 4.]  
663     cord_individual_obj[indivial_i, :] = [10. 3. 17. 20.]  
664     cord_individual_obj[indivial_i, :] = [11. 3. 1. 4.]  
665     cord_individual_obj[indivial_i, :] = [12. 3. 2. 5.]  
666     cord_individual_obj[indivial_i, :] = [13. 3. 1. 4.]  
667     cord_individual_obj[indivial_i, :] = [14. 3. 1. 4.]
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668 cord_individual_obj[indivial_i, :] = [15. 2. 2. 4.]
669 cord_individual_obj[indivial_i, :] = [16. 3. 1. 4.]
670 cord_individual_obj[indivial_i, :] = [17. 3. 1. 4.]
671 cord_individual_obj[indivial_i, :] = [18. 2. 2. 4.]
672 cord_individual_obj[indivial_i, :] = [19. 3. 13. 16.]
673 cord_individual_obj[indivial_i, :] = [20. 3. 17. 20.]
674 cord_individual_obj[indivial_i, :] = [21. 2. 1. 3.]
675 cord_individual_obj[indivial_i, :] = [22. 2. 2. 4.]
676 cord_individual_obj[indivial_i, :] = [23. 3. 1. 4.]
677 cord_individual_obj[indivial_i, :] = [24. 2. 1. 3.]
678
679 min(cord_individual_obj[:, 3]) = 3.0
680 historl_G_best_iter[iter, 3] = 3.0
681 Iteration calculate over
682
683
684
685
686 All item are in Bin and:
687 Bin area = 1080
688 Real_area = 66.0
689 Proportion_of_area = 0.0611111111111111
690 BEST_CHROM =
691     berth: [17.5 8. 11.5 14.5 3. 23.5 22.5]
692     time: [0. 0. 0. 0. 1. 0.]
693     num_QC: [3. 4. 3. 3. 2. 5. 6.]
694 Objective function values and some other indicators:
695 Obj0 = 2.00          Obj1 = 1.00          Obj0 + Obj1 = 3.00
696 Total movement of crane: 0.00
697 Total waiting time in berth position: 1.00
698 Total index of q during berthing: 417.00
699 Specific arrangement for each vessel:
700
    V_id: 0           li: 3.0           xi: 17.5           bow of i: 16.0           tail of i: 19.0           gama_i0: 0.0           gama_i1: 1
    .0             gama_i1 + 1: 2.0           gama_i1 - gama_i0: 1.0           duration_time_i: 2.0           demand_i: 80.0           work
    load_i: 80.0       work load gap_i: 0
701
    V_id: 1           li: 4.0           xi: 8.0           bow of i: 6.0           tail of i: 10.0           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: 120.0           work load_i:
    120.0       work load gap_i: 0
702
    V_id: 2           li: 3.0           xi: 11.5           bow of i: 10.0           tail of i: 13.0           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: 160.0           work
    load_i: 160.0     work load gap_i: 0
703
    V_id: 3           li: 3.0           xi: 14.5           bow of i: 13.0           tail of i: 16.0           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: 140.0           work
    load_i: 140.0     work load gap_i: 0
704
    V_id: 4           li: 6.0           xi: 3.0           bow of i: 0.0           tail of i: 6.0           gama_i0: 0.0           gama_i1: 2.0
    .0             gama_i1 + 1: 3.0           gama_i1 - gama_i0: 2.0           duration_time_i: 3.0           demand_i: 120.0           work load_i:
    120.0       work load gap_i: 0
705
    V_id: 5           li: 9.0           xi: 23.5           bow of i: 19.0           tail of i: 28.0           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
    load_i: 60.0       work load gap_i: 0
706
    V_id: 6           li: 7.0           xi: 22.5           bow of i: 19.0           tail of i: 26.0           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: 60.0           work
    load_i: 60.0       work load gap_i: 0
707
708 Algorithm finished and the total CPU time: 199 s
709 End
710

```