

unknown

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80     cord_individual_obj[indivial_i,:] = [ 0. 5. 72. 77.]
81     cord_individual_obj[indivial_i,:] = [ 1. 5. 58. 63.]
82     cord_individual_obj[indivial_i,:] = [ 2. 4. 44. 48.]
83     cord_individual_obj[indivial_i,:] = [ 3. 5. 110. 115.]
84     cord_individual_obj[indivial_i,:] = [ 4. 5. 58. 63.]
85     cord_individual_obj[indivial_i,:] = [ 5. 5. 44. 49.]
86     cord_individual_obj[indivial_i,:] = [ 6. 5. 8. 13.]
87     cord_individual_obj[indivial_i,:] = [ 7. 5. 48. 53.]
88     cord_individual_obj[indivial_i,:] = [ 8. 4. 56. 60.]
89     cord_individual_obj[indivial_i,:] = [ 9. 5. 48. 53.]
90
91 min(cord_individual_obj[:,3]) = 13.0
92 historl_G_best_iter[iter,3] = 13.0
93 Begin iteration:
94
95 iter = 4
96     cord_individual_obj[indivial_i,:] = [ 0. 5. 16. 21.]
97     cord_individual_obj[indivial_i,:] = [ 1. 5. 44. 49.]
98     cord_individual_obj[indivial_i,:] = [ 2. 5. 8. 13.]
99     cord_individual_obj[indivial_i,:] = [ 3. 5. 8. 13.]
100    cord_individual_obj[indivial_i,:] = [ 4. 5. 44. 49.]
101    cord_individual_obj[indivial_i,:] = [ 5. 5. 16. 21.]
102    cord_individual_obj[indivial_i,:] = [ 6. 5. 66. 71.]
103    cord_individual_obj[indivial_i,:] = [ 7. 5. 84. 89.]
104    cord_individual_obj[indivial_i,:] = [ 8. 5. 24. 29.]
105    cord_individual_obj[indivial_i,:] = [ 9. 5. 24. 29.]
106
107 min(cord_individual_obj[:,3]) = 13.0
108 historl_G_best_iter[iter,3] = 13.0
109 Begin iteration:
110
111 iter = 5
112     cord_individual_obj[indivial_i,:] = [ 0. 6. 8. 14.]
113     cord_individual_obj[indivial_i,:] = [ 1. 5. 44. 49.]
114     cord_individual_obj[indivial_i,:] = [ 2. 6. 76. 82.]
115     cord_individual_obj[indivial_i,:] = [ 3. 4. 92. 96.]
116     cord_individual_obj[indivial_i,:] = [ 4. 5. 18. 23.]
117     cord_individual_obj[indivial_i,:] = [ 5. 5. 56. 61.]
118     cord_individual_obj[indivial_i,:] = [ 6. 5. 16. 21.]
119     cord_individual_obj[indivial_i,:] = [ 7. 5. 8. 13.]
120     cord_individual_obj[indivial_i,:] = [ 8. 5. 16. 21.]
121     cord_individual_obj[indivial_i,:] = [ 9. 5. 60. 65.]
122
123 min(cord_individual_obj[:,3]) = 13.0
124 historl_G_best_iter[iter,3] = 13.0
125 Begin iteration:
126
127 iter = 6
128     cord_individual_obj[indivial_i,:] = [ 0. 6. 44. 50.]
129     cord_individual_obj[indivial_i,:] = [ 1. 5. 52. 57.]
130     cord_individual_obj[indivial_i,:] = [ 2. 6. 34. 40.]
131     cord_individual_obj[indivial_i,:] = [ 3. 5. 8. 13.]
132     cord_individual_obj[indivial_i,:] = [ 4. 4. 48. 52.]
133     cord_individual_obj[indivial_i,:] = [ 5. 5. 24. 29.]
134     cord_individual_obj[indivial_i,:] = [ 6. 5. 52. 57.]
135     cord_individual_obj[indivial_i,:] = [ 7. 6. 64. 70.]
136     cord_individual_obj[indivial_i,:] = [ 8. 4. 38. 42.]
137     cord_individual_obj[indivial_i,:] = [ 9. 5. 30. 35.]
138
139 min(cord_individual_obj[:,3]) = 13.0
140 historl_G_best_iter[iter,3] = 13.0
141 Begin iteration:
142
143 iter = 7
144     cord_individual_obj[indivial_i,:] = [ 0. 6. 76. 82.]
145     cord_individual_obj[indivial_i,:] = [ 1. 5. 32. 37.]
146     cord_individual_obj[indivial_i,:] = [ 2. 6. 44. 50.]
147     cord_individual_obj[indivial_i,:] = [ 3. 4. 76. 80.]
148     cord_individual_obj[indivial_i,:] = [ 4. 5. 18. 23.]
149     cord_individual_obj[indivial_i,:] = [ 5. 5. 64. 69.]
150     cord_individual_obj[indivial_i,:] = [ 6. 5. 38. 43.]
151     cord_individual_obj[indivial_i,:] = [ 7. 5. 8. 13.]
152     cord_individual_obj[indivial_i,:] = [ 8. 5. 28. 33.]
153     cord_individual_obj[indivial_i,:] = [ 9. 5. 32. 37.]
154
155 min(cord_individual_obj[:,3]) = 13.0
156 historl_G_best_iter[iter,3] = 13.0
157 Begin iteration:
158
159 iter = 8
160     cord_individual_obj[indivial_i,:] = [ 0. 5. 8. 13.]
161     cord_individual_obj[indivial_i,:] = [ 1. 5. 32. 37.]
162     cord_individual_obj[indivial_i,:] = [ 2. 6. 48. 54.]
163     cord_individual_obj[indivial_i,:] = [ 3. 5. 40. 45.]

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164 cord_individual_obj[indivial_i, :] = [ 4. 5. 52. 57.]
165 cord_individual_obj[indivial_i, :] = [ 5. 5. 60. 65.]
166 cord_individual_obj[indivial_i, :] = [ 6. 5. 32. 37.]
167 cord_individual_obj[indivial_i, :] = [ 7. 6. 64. 70.]
168 cord_individual_obj[indivial_i, :] = [ 8. 4. 48. 52.]
169 cord_individual_obj[indivial_i, :] = [ 9. 5. 42. 47.]
170
171 min(cord_individual_obj[:, 3]) = 13.0
172 historl_G_best_iter[iter, 3] = 13.0
173 Begin iteration:
174
175 iter = 9
176 cord_individual_obj[indivial_i, :] = [ 0. 6. 76. 82.]
177 cord_individual_obj[indivial_i, :] = [ 1. 5. 64. 69.]
178 cord_individual_obj[indivial_i, :] = [ 2. 6. 48. 54.]
179 cord_individual_obj[indivial_i, :] = [ 3. 5. 76. 81.]
180 cord_individual_obj[indivial_i, :] = [ 4. 5. 28. 33.]
181 cord_individual_obj[indivial_i, :] = [ 5. 5. 60. 65.]
182 cord_individual_obj[indivial_i, :] = [ 6. 5. 48. 53.]
183 cord_individual_obj[indivial_i, :] = [ 7. 5. 8. 13.]
184 cord_individual_obj[indivial_i, :] = [ 8. 4. 56. 60.]
185 cord_individual_obj[indivial_i, :] = [ 9. 5. 54. 59.]
186
187 min(cord_individual_obj[:, 3]) = 13.0
188 historl_G_best_iter[iter, 3] = 13.0
189 Begin iteration:
190
191 iter = 10
192 cord_individual_obj[indivial_i, :] = [ 0. 5. 8. 13.]
193 cord_individual_obj[indivial_i, :] = [ 1. 5. 54. 59.]
194 cord_individual_obj[indivial_i, :] = [ 2. 6. 76. 82.]
195 cord_individual_obj[indivial_i, :] = [ 3. 4. 76. 80.]
196 cord_individual_obj[indivial_i, :] = [ 4. 5. 64. 69.]
197 cord_individual_obj[indivial_i, :] = [ 5. 5. 64. 69.]
198 cord_individual_obj[indivial_i, :] = [ 6. 5. 54. 59.]
199 cord_individual_obj[indivial_i, :] = [ 7. 6. 64. 70.]
200 cord_individual_obj[indivial_i, :] = [ 8. 4. 64. 68.]
201 cord_individual_obj[indivial_i, :] = [ 9. 5. 64. 69.]
202
203 min(cord_individual_obj[:, 3]) = 13.0
204 historl_G_best_iter[iter, 3] = 13.0
205 Begin iteration:
206
207 iter = 11
208 cord_individual_obj[indivial_i, :] = [ 0. 6. 76. 82.]
209 cord_individual_obj[indivial_i, :] = [ 1. 5. 40. 45.]
210 cord_individual_obj[indivial_i, :] = [ 2. 5. 8. 13.]
211 cord_individual_obj[indivial_i, :] = [ 3. 5. 22. 27.]
212 cord_individual_obj[indivial_i, :] = [ 4. 5. 24. 29.]
213 cord_individual_obj[indivial_i, :] = [ 5. 5. 28. 33.]
214 cord_individual_obj[indivial_i, :] = [ 6. 5. 22. 27.]
215 cord_individual_obj[indivial_i, :] = [ 7. 5. 8. 13.]
216 cord_individual_obj[indivial_i, :] = [ 8. 5. 16. 21.]
217 cord_individual_obj[indivial_i, :] = [ 9. 5. 52. 57.]
218
219 min(cord_individual_obj[:, 3]) = 13.0
220 historl_G_best_iter[iter, 3] = 13.0
221 Begin iteration:
222
223 iter = 12
224 cord_individual_obj[indivial_i, :] = [ 0. 5. 8. 13.]
225 cord_individual_obj[indivial_i, :] = [ 1. 5. 34. 39.]
226 cord_individual_obj[indivial_i, :] = [ 2. 6. 76. 82.]
227 cord_individual_obj[indivial_i, :] = [ 3. 5. 76. 81.]
228 cord_individual_obj[indivial_i, :] = [ 4. 5. 60. 65.]
229 cord_individual_obj[indivial_i, :] = [ 5. 5. 48. 53.]
230 cord_individual_obj[indivial_i, :] = [ 6. 5. 44. 49.]
231 cord_individual_obj[indivial_i, :] = [ 7. 5. 38. 43.]
232 cord_individual_obj[indivial_i, :] = [ 8. 4. 58. 62.]
233 cord_individual_obj[indivial_i, :] = [ 9. 5. 34. 39.]
234
235 min(cord_individual_obj[:, 3]) = 13.0
236 historl_G_best_iter[iter, 3] = 13.0
237 Begin iteration:
238
239 iter = 13
240 cord_individual_obj[indivial_i, :] = [ 0. 6. 76. 82.]
241 cord_individual_obj[indivial_i, :] = [ 1. 5. 38. 43.]
242 cord_individual_obj[indivial_i, :] = [ 2. 5. 8. 13.]
243 cord_individual_obj[indivial_i, :] = [ 3. 4. 70. 74.]
244 cord_individual_obj[indivial_i, :] = [ 4. 5. 56. 61.]
245 cord_individual_obj[indivial_i, :] = [ 5. 5. 60. 65.]
246 cord_individual_obj[indivial_i, :] = [ 6. 5. 48. 53.]
247 cord_individual_obj[indivial_i, :] = [ 7. 6. 38. 44.]

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248     cord_individual_obj[indivial_i, :] = [ 8. 5. 38. 43.]
249     cord_individual_obj[indivial_i, :] = [ 9. 5. 38. 43.]
250
251     min(cord_individual_obj[:, 3]) = 13.0
252     historl_G_best_iter[iter, 3] = 13.0
253 Begin iteration:
254
255 iter = 14
256     cord_individual_obj[indivial_i, :] = [ 0. 5. 8. 13.]
257     cord_individual_obj[indivial_i, :] = [ 1. 5. 28. 33.]
258     cord_individual_obj[indivial_i, :] = [ 2. 6. 76. 82.]
259     cord_individual_obj[indivial_i, :] = [ 3. 5. 44. 49.]
260     cord_individual_obj[indivial_i, :] = [ 4. 5. 22. 27.]
261     cord_individual_obj[indivial_i, :] = [ 5. 5. 60. 65.]
262     cord_individual_obj[indivial_i, :] = [ 6. 5. 48. 53.]
263     cord_individual_obj[indivial_i, :] = [ 7. 5. 78. 83.]
264     cord_individual_obj[indivial_i, :] = [ 8. 5. 32. 37.]
265     cord_individual_obj[indivial_i, :] = [ 9. 5. 28. 33.]
266
267     min(cord_individual_obj[:, 3]) = 13.0
268     historl_G_best_iter[iter, 3] = 13.0
269 Begin iteration:
270
271 iter = 15
272     cord_individual_obj[indivial_i, :] = [ 0. 6. 76. 82.]
273     cord_individual_obj[indivial_i, :] = [ 1. 5. 42. 47.]
274     cord_individual_obj[indivial_i, :] = [ 2. 6. 68. 74.]
275     cord_individual_obj[indivial_i, :] = [ 3. 5. 48. 53.]
276     cord_individual_obj[indivial_i, :] = [ 4. 5. 64. 69.]
277     cord_individual_obj[indivial_i, :] = [ 5. 5. 60. 65.]
278     cord_individual_obj[indivial_i, :] = [ 6. 5. 48. 53.]
279     cord_individual_obj[indivial_i, :] = [ 7. 5. 8. 13.]
280     cord_individual_obj[indivial_i, :] = [ 8. 4. 48. 52.]
281     cord_individual_obj[indivial_i, :] = [ 9. 5. 38. 43.]
282
283     min(cord_individual_obj[:, 3]) = 13.0
284     historl_G_best_iter[iter, 3] = 13.0
285 Begin iteration:
286
287 iter = 16
288     cord_individual_obj[indivial_i, :] = [ 0. 5. 8. 13.]
289     cord_individual_obj[indivial_i, :] = [ 1. 5. 62. 67.]
290     cord_individual_obj[indivial_i, :] = [ 2. 6. 48. 54.]
291     cord_individual_obj[indivial_i, :] = [ 3. 4. 58. 62.]
292     cord_individual_obj[indivial_i, :] = [ 4. 4. 58. 62.]
293     cord_individual_obj[indivial_i, :] = [ 5. 5. 60. 65.]
294     cord_individual_obj[indivial_i, :] = [ 6. 5. 48. 53.]
295     cord_individual_obj[indivial_i, :] = [ 7. 6. 64. 70.]
296     cord_individual_obj[indivial_i, :] = [ 8. 4. 48. 52.]
297     cord_individual_obj[indivial_i, :] = [ 9. 5. 38. 43.]
298
299     min(cord_individual_obj[:, 3]) = 13.0
300     historl_G_best_iter[iter, 3] = 13.0
301 Begin iteration:
302
303 iter = 17
304     cord_individual_obj[indivial_i, :] = [ 0. 6. 76. 82.]
305     cord_individual_obj[indivial_i, :] = [ 1. 5. 52. 57.]
306     cord_individual_obj[indivial_i, :] = [ 2. 4. 68. 72.]
307     cord_individual_obj[indivial_i, :] = [ 3. 5. 44. 49.]
308     cord_individual_obj[indivial_i, :] = [ 4. 5. 52. 57.]
309     cord_individual_obj[indivial_i, :] = [ 5. 5. 60. 65.]
310     cord_individual_obj[indivial_i, :] = [ 6. 5. 48. 53.]
311     cord_individual_obj[indivial_i, :] = [ 7. 5. 8. 13.]
312     cord_individual_obj[indivial_i, :] = [ 8. 5. 32. 37.]
313     cord_individual_obj[indivial_i, :] = [ 9. 5. 28. 33.]
314
315     min(cord_individual_obj[:, 3]) = 13.0
316     historl_G_best_iter[iter, 3] = 13.0
317 Begin iteration:
318
319 iter = 18
320     cord_individual_obj[indivial_i, :] = [ 0. 5. 8. 13.]
321     cord_individual_obj[indivial_i, :] = [ 1. 5. 28. 33.]
322     cord_individual_obj[indivial_i, :] = [ 2. 6. 48. 54.]
323     cord_individual_obj[indivial_i, :] = [ 3. 4. 58. 62.]
324     cord_individual_obj[indivial_i, :] = [ 4. 5. 28. 33.]
325     cord_individual_obj[indivial_i, :] = [ 5. 5. 60. 65.]
326     cord_individual_obj[indivial_i, :] = [ 6. 5. 48. 53.]
327     cord_individual_obj[indivial_i, :] = [ 7. 6. 64. 70.]
328     cord_individual_obj[indivial_i, :] = [ 8. 5. 32. 37.]
329     cord_individual_obj[indivial_i, :] = [ 9. 5. 28. 33.]
330
331     min(cord_individual_obj[:, 3]) = 13.0

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332 historl_G_best_iter[iter, 3] = 13.0
333 Begin iteration:
334
335 iter = 19
336 cord_individual_obj[indivial_i, :] = [ 0. 6. 76. 82.]
337 cord_individual_obj[indivial_i, :] = [ 1. 5. 52. 57.]
338 cord_individual_obj[indivial_i, :] = [ 2. 4. 88. 92.]
339 cord_individual_obj[indivial_i, :] = [ 3. 5. 8. 13.]
340 cord_individual_obj[indivial_i, :] = [ 4. 4. 70. 74.]
341 cord_individual_obj[indivial_i, :] = [ 5. 5. 60. 65.]
342 cord_individual_obj[indivial_i, :] = [ 6. 5. 48. 53.]
343 cord_individual_obj[indivial_i, :] = [ 7. 5. 8. 13.]
344 cord_individual_obj[indivial_i, :] = [ 8. 4. 56. 60.]
345 cord_individual_obj[indivial_i, :] = [ 9. 5. 28. 33.]
346
347 min(cord_individual_obj[:, 3]) = 13.0
348 historl_G_best_iter[iter, 3] = 13.0
349 Begin iteration:
350
351 iter = 20
352 cord_individual_obj[indivial_i, :] = [ 0. 6. 52. 58.]
353 cord_individual_obj[indivial_i, :] = [ 1. 5. 64. 69.]
354 cord_individual_obj[indivial_i, :] = [ 2. 5. 8. 13.]
355 cord_individual_obj[indivial_i, :] = [ 3. 4. 58. 62.]
356 cord_individual_obj[indivial_i, :] = [ 4. 5. 58. 63.]
357 cord_individual_obj[indivial_i, :] = [ 5. 5. 60. 65.]
358 cord_individual_obj[indivial_i, :] = [ 6. 5. 60. 65.]
359 cord_individual_obj[indivial_i, :] = [ 7. 6. 38. 44.]
360 cord_individual_obj[indivial_i, :] = [ 8. 5. 38. 43.]
361 cord_individual_obj[indivial_i, :] = [ 9. 5. 42. 47.]
362
363 min(cord_individual_obj[:, 3]) = 13.0
364 historl_G_best_iter[iter, 3] = 13.0
365 Begin iteration:
366
367 iter = 21
368 cord_individual_obj[indivial_i, :] = [ 0. 6. 24. 30.]
369 cord_individual_obj[indivial_i, :] = [ 1. 5. 8. 13.]
370 cord_individual_obj[indivial_i, :] = [ 2. 6. 52. 58.]
371 cord_individual_obj[indivial_i, :] = [ 3. 5. 48. 53.]
372 cord_individual_obj[indivial_i, :] = [ 4. 4. 70. 74.]
373 cord_individual_obj[indivial_i, :] = [ 5. 5. 60. 65.]
374 cord_individual_obj[indivial_i, :] = [ 6. 5. 60. 65.]
375 cord_individual_obj[indivial_i, :] = [ 7. 6. 38. 44.]
376 cord_individual_obj[indivial_i, :] = [ 8. 5. 32. 37.]
377 cord_individual_obj[indivial_i, :] = [ 9. 5. 42. 47.]
378
379 min(cord_individual_obj[:, 3]) = 13.0
380 historl_G_best_iter[iter, 3] = 13.0
381 Begin iteration:
382
383 iter = 22
384 cord_individual_obj[indivial_i, :] = [ 0. 6. 52. 58.]
385 cord_individual_obj[indivial_i, :] = [ 1. 5. 58. 63.]
386 cord_individual_obj[indivial_i, :] = [ 2. 6. 52. 58.]
387 cord_individual_obj[indivial_i, :] = [ 3. 5. 58. 63.]
388 cord_individual_obj[indivial_i, :] = [ 4. 5. 8. 13.]
389 cord_individual_obj[indivial_i, :] = [ 5. 5. 60. 65.]
390 cord_individual_obj[indivial_i, :] = [ 6. 5. 58. 63.]
391 cord_individual_obj[indivial_i, :] = [ 7. 6. 38. 44.]
392 cord_individual_obj[indivial_i, :] = [ 8. 5. 38. 43.]
393 cord_individual_obj[indivial_i, :] = [ 9. 5. 38. 43.]
394
395 min(cord_individual_obj[:, 3]) = 13.0
396 historl_G_best_iter[iter, 3] = 13.0
397 Begin iteration:
398
399 iter = 23
400 cord_individual_obj[indivial_i, :] = [ 0. 5. 78. 83.]
401 cord_individual_obj[indivial_i, :] = [ 1. 5. 8. 13.]
402 cord_individual_obj[indivial_i, :] = [ 2. 5. 44. 49.]
403 cord_individual_obj[indivial_i, :] = [ 3. 5. 22. 27.]
404 cord_individual_obj[indivial_i, :] = [ 4. 4. 58. 62.]
405 cord_individual_obj[indivial_i, :] = [ 5. 5. 8. 13.]
406 cord_individual_obj[indivial_i, :] = [ 6. 5. 22. 27.]
407 cord_individual_obj[indivial_i, :] = [ 7. 6. 8. 14.]
408 cord_individual_obj[indivial_i, :] = [ 8. 5. 22. 27.]
409 cord_individual_obj[indivial_i, :] = [ 9. 5. 22. 27.]
410
411 min(cord_individual_obj[:, 3]) = 13.0
412 historl_G_best_iter[iter, 3] = 13.0
413 Begin iteration:
414
415 iter = 24

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416 cord_individual_obj[indivial_i,:] = [ 0. 5. 8. 13.]
417 cord_individual_obj[indivial_i,:] = [ 1. 5. 58. 63.]
418 cord_individual_obj[indivial_i,:] = [ 2. 4. 58. 62.]
419 cord_individual_obj[indivial_i,:] = [ 3. 5. 58. 63.]
420 cord_individual_obj[indivial_i,:] = [ 4. 5. 60. 65.]
421 cord_individual_obj[indivial_i,:] = [ 5. 5. 58. 63.]
422 cord_individual_obj[indivial_i,:] = [ 6. 5. 58. 63.]
423 cord_individual_obj[indivial_i,:] = [ 7. 6. 38. 44.]
424 cord_individual_obj[indivial_i,:] = [ 8. 4. 38. 42.]
425 cord_individual_obj[indivial_i,:] = [ 9. 5. 38. 43.]
426
427 min(cord_individual_obj[:,3]) = 13.0
428 historl_G_best_iter[iter,3] = 13.0
429 Begin iteration:
430
431 iter = 25
432 cord_individual_obj[indivial_i,:] = [ 0. 6. 52. 58.]
433 cord_individual_obj[indivial_i,:] = [ 1. 5. 28. 33.]
434 cord_individual_obj[indivial_i,:] = [ 2. 6. 24. 30.]
435 cord_individual_obj[indivial_i,:] = [ 3. 4. 76. 80.]
436 cord_individual_obj[indivial_i,:] = [ 4. 5. 8. 13.]
437 cord_individual_obj[indivial_i,:] = [ 5. 5. 32. 37.]
438 cord_individual_obj[indivial_i,:] = [ 6. 5. 32. 37.]
439 cord_individual_obj[indivial_i,:] = [ 7. 6. 24. 30.]
440 cord_individual_obj[indivial_i,:] = [ 8. 5. 32. 37.]
441 cord_individual_obj[indivial_i,:] = [ 9. 5. 22. 27.]
442
443 min(cord_individual_obj[:,3]) = 13.0
444 historl_G_best_iter[iter,3] = 13.0
445 Begin iteration:
446
447 iter = 26
448 cord_individual_obj[indivial_i,:] = [ 0. 6. 52. 58.]
449 cord_individual_obj[indivial_i,:] = [ 1. 5. 58. 63.]
450 cord_individual_obj[indivial_i,:] = [ 2. 6. 52. 58.]
451 cord_individual_obj[indivial_i,:] = [ 3. 5. 8. 13.]
452 cord_individual_obj[indivial_i,:] = [ 4. 4. 58. 62.]
453 cord_individual_obj[indivial_i,:] = [ 5. 5. 58. 63.]
454 cord_individual_obj[indivial_i,:] = [ 6. 5. 58. 63.]
455 cord_individual_obj[indivial_i,:] = [ 7. 6. 38. 44.]
456 cord_individual_obj[indivial_i,:] = [ 8. 4. 38. 42.]
457 cord_individual_obj[indivial_i,:] = [ 9. 5. 38. 43.]
458
459 min(cord_individual_obj[:,3]) = 13.0
460 historl_G_best_iter[iter,3] = 13.0
461 Begin iteration:
462
463 iter = 27
464 cord_individual_obj[indivial_i,:] = [ 0. 6. 60. 66.]
465 cord_individual_obj[indivial_i,:] = [ 1. 5. 8. 13.]
466 cord_individual_obj[indivial_i,:] = [ 2. 6. 52. 58.]
467 cord_individual_obj[indivial_i,:] = [ 3. 4. 58. 62.]
468 cord_individual_obj[indivial_i,:] = [ 4. 5. 58. 63.]
469 cord_individual_obj[indivial_i,:] = [ 5. 5. 58. 63.]
470 cord_individual_obj[indivial_i,:] = [ 6. 5. 58. 63.]
471 cord_individual_obj[indivial_i,:] = [ 7. 6. 42. 48.]
472 cord_individual_obj[indivial_i,:] = [ 8. 4. 32. 36.]
473 cord_individual_obj[indivial_i,:] = [ 9. 5. 38. 43.]
474
475 min(cord_individual_obj[:,3]) = 13.0
476 historl_G_best_iter[iter,3] = 13.0
477 Begin iteration:
478
479 iter = 28
480 cord_individual_obj[indivial_i,:] = [ 0. 5. 8. 13.]
481 cord_individual_obj[indivial_i,:] = [ 1. 5. 58. 63.]
482 cord_individual_obj[indivial_i,:] = [ 2. 6. 8. 14.]
483 cord_individual_obj[indivial_i,:] = [ 3. 5. 8. 13.]
484 cord_individual_obj[indivial_i,:] = [ 4. 4. 34. 38.]
485 cord_individual_obj[indivial_i,:] = [ 5. 5. 22. 27.]
486 cord_individual_obj[indivial_i,:] = [ 6. 5. 22. 27.]
487 cord_individual_obj[indivial_i,:] = [ 7. 5. 36. 41.]
488 cord_individual_obj[indivial_i,:] = [ 8. 5. 22. 27.]
489 cord_individual_obj[indivial_i,:] = [ 9. 5. 22. 27.]
490
491 min(cord_individual_obj[:,3]) = 13.0
492 historl_G_best_iter[iter,3] = 13.0
493 Begin iteration:
494
495 iter = 29
496 cord_individual_obj[indivial_i,:] = [ 0. 6. 52. 58.]
497 cord_individual_obj[indivial_i,:] = [ 1. 5. 8. 13.]
498 cord_individual_obj[indivial_i,:] = [ 2. 6. 52. 58.]
499 cord_individual_obj[indivial_i,:] = [ 3. 4. 58. 62.]

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500 cord_individual_obj[indivial_i, :] = [ 4. 5. 58. 63.]
501 cord_individual_obj[indivial_i, :] = [ 5. 5. 58. 63.]
502 cord_individual_obj[indivial_i, :] = [ 6. 5. 58. 63.]
503 cord_individual_obj[indivial_i, :] = [ 7. 6. 42. 48.]
504 cord_individual_obj[indivial_i, :] = [ 8. 5. 28. 33.]
505 cord_individual_obj[indivial_i, :] = [ 9. 5. 38. 43.]
506
507 min(cord_individual_obj[:, 3]) = 13.0
508 historl_G_best_iter[iter, 3] = 13.0
509 Begin iteration:
510
511 iter = 30
512 cord_individual_obj[indivial_i, :] = [ 0. 6. 48. 54.]
513 cord_individual_obj[indivial_i, :] = [ 1. 5. 58. 63.]
514 cord_individual_obj[indivial_i, :] = [ 2. 6. 24. 30.]
515 cord_individual_obj[indivial_i, :] = [ 3. 5. 48. 53.]
516 cord_individual_obj[indivial_i, :] = [ 4. 5. 8. 13.]
517 cord_individual_obj[indivial_i, :] = [ 5. 5. 40. 45.]
518 cord_individual_obj[indivial_i, :] = [ 6. 5. 32. 37.]
519 cord_individual_obj[indivial_i, :] = [ 7. 6. 42. 48.]
520 cord_individual_obj[indivial_i, :] = [ 8. 5. 32. 37.]
521 cord_individual_obj[indivial_i, :] = [ 9. 5. 26. 31.]
522
523 min(cord_individual_obj[:, 3]) = 13.0
524 historl_G_best_iter[iter, 3] = 13.0
525 Begin iteration:
526
527 iter = 31
528 cord_individual_obj[indivial_i, :] = [ 0. 5. 48. 53.]
529 cord_individual_obj[indivial_i, :] = [ 1. 5. 8. 13.]
530 cord_individual_obj[indivial_i, :] = [ 2. 4. 70. 74.]
531 cord_individual_obj[indivial_i, :] = [ 3. 4. 68. 72.]
532 cord_individual_obj[indivial_i, :] = [ 4. 4. 58. 62.]
533 cord_individual_obj[indivial_i, :] = [ 5. 5. 22. 27.]
534 cord_individual_obj[indivial_i, :] = [ 6. 5. 60. 65.]
535 cord_individual_obj[indivial_i, :] = [ 7. 6. 42. 48.]
536 cord_individual_obj[indivial_i, :] = [ 8. 4. 28. 32.]
537 cord_individual_obj[indivial_i, :] = [ 9. 5. 38. 43.]
538
539 min(cord_individual_obj[:, 3]) = 13.0
540 historl_G_best_iter[iter, 3] = 13.0
541 Begin iteration:
542
543 iter = 32
544 cord_individual_obj[indivial_i, :] = [ 0. 6. 52. 58.]
545 cord_individual_obj[indivial_i, :] = [ 1. 5. 58. 63.]
546 cord_individual_obj[indivial_i, :] = [ 2. 5. 8. 13.]
547 cord_individual_obj[indivial_i, :] = [ 3. 5. 58. 63.]
548 cord_individual_obj[indivial_i, :] = [ 4. 5. 58. 63.]
549 cord_individual_obj[indivial_i, :] = [ 5. 5. 58. 63.]
550 cord_individual_obj[indivial_i, :] = [ 6. 5. 58. 63.]
551 cord_individual_obj[indivial_i, :] = [ 7. 6. 38. 44.]
552 cord_individual_obj[indivial_i, :] = [ 8. 5. 38. 43.]
553 cord_individual_obj[indivial_i, :] = [ 9. 5. 38. 43.]
554
555 min(cord_individual_obj[:, 3]) = 13.0
556 historl_G_best_iter[iter, 3] = 13.0
557 Begin iteration:
558
559 iter = 33
560 cord_individual_obj[indivial_i, :] = [ 0. 6. 52. 58.]
561 cord_individual_obj[indivial_i, :] = [ 1. 5. 8. 13.]
562 cord_individual_obj[indivial_i, :] = [ 2. 6. 52. 58.]
563 cord_individual_obj[indivial_i, :] = [ 3. 4. 58. 62.]
564 cord_individual_obj[indivial_i, :] = [ 4. 4. 58. 62.]
565 cord_individual_obj[indivial_i, :] = [ 5. 5. 58. 63.]
566 cord_individual_obj[indivial_i, :] = [ 6. 5. 58. 63.]
567 cord_individual_obj[indivial_i, :] = [ 7. 6. 42. 48.]
568 cord_individual_obj[indivial_i, :] = [ 8. 5. 38. 43.]
569 cord_individual_obj[indivial_i, :] = [ 9. 5. 38. 43.]
570
571 min(cord_individual_obj[:, 3]) = 13.0
572 historl_G_best_iter[iter, 3] = 13.0
573 Begin iteration:
574
575 iter = 34
576 cord_individual_obj[indivial_i, :] = [ 0. 6. 12. 18.]
577 cord_individual_obj[indivial_i, :] = [ 1. 5. 58. 63.]
578 cord_individual_obj[indivial_i, :] = [ 2. 6. 24. 30.]
579 cord_individual_obj[indivial_i, :] = [ 3. 5. 48. 53.]
580 cord_individual_obj[indivial_i, :] = [ 4. 5. 34. 39.]
581 cord_individual_obj[indivial_i, :] = [ 5. 5. 8. 13.]
582 cord_individual_obj[indivial_i, :] = [ 6. 5. 32. 37.]
583 cord_individual_obj[indivial_i, :] = [ 7. 6. 42. 48.]

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584     cord_individual_obj[indivial_i, :] = [ 8. 5. 32. 37.]
585     cord_individual_obj[indivial_i, :] = [ 9. 5. 26. 31.]
586
587     min(cord_individual_obj[:, 3]) = 13.0
588     historl_G_best_iter[iter, 3] = 13.0
589 Begin iteration:
590
591 iter = 35
592     cord_individual_obj[indivial_i, :] = [ 0. 6. 52. 58.]
593     cord_individual_obj[indivial_i, :] = [ 1. 5. 8. 13.]
594     cord_individual_obj[indivial_i, :] = [ 2. 6. 52. 58.]
595     cord_individual_obj[indivial_i, :] = [ 3. 5. 58. 63.]
596     cord_individual_obj[indivial_i, :] = [ 4. 5. 58. 63.]
597     cord_individual_obj[indivial_i, :] = [ 5. 5. 58. 63.]
598     cord_individual_obj[indivial_i, :] = [ 6. 5. 58. 63.]
599     cord_individual_obj[indivial_i, :] = [ 7. 6. 38. 44.]
600     cord_individual_obj[indivial_i, :] = [ 8. 4. 38. 42.]
601     cord_individual_obj[indivial_i, :] = [ 9. 5. 38. 43.]
602
603     min(cord_individual_obj[:, 3]) = 13.0
604     historl_G_best_iter[iter, 3] = 13.0
605 Begin iteration:
606
607 iter = 36
608     cord_individual_obj[indivial_i, :] = [ 0. 6. 24. 30.]
609     cord_individual_obj[indivial_i, :] = [ 1. 5. 58. 63.]
610     cord_individual_obj[indivial_i, :] = [ 2. 6. 52. 58.]
611     cord_individual_obj[indivial_i, :] = [ 3. 5. 8. 13.]
612     cord_individual_obj[indivial_i, :] = [ 4. 5. 58. 63.]
613     cord_individual_obj[indivial_i, :] = [ 5. 5. 58. 63.]
614     cord_individual_obj[indivial_i, :] = [ 6. 5. 58. 63.]
615     cord_individual_obj[indivial_i, :] = [ 7. 6. 42. 48.]
616     cord_individual_obj[indivial_i, :] = [ 8. 4. 32. 36.]
617     cord_individual_obj[indivial_i, :] = [ 9. 5. 38. 43.]
618
619     min(cord_individual_obj[:, 3]) = 13.0
620     historl_G_best_iter[iter, 3] = 13.0
621 Begin iteration:
622
623 iter = 37
624     cord_individual_obj[indivial_i, :] = [ 0. 6. 52. 58.]
625     cord_individual_obj[indivial_i, :] = [ 1. 5. 8. 13.]
626     cord_individual_obj[indivial_i, :] = [ 2. 6. 52. 58.]
627     cord_individual_obj[indivial_i, :] = [ 3. 4. 58. 62.]
628     cord_individual_obj[indivial_i, :] = [ 4. 5. 58. 63.]
629     cord_individual_obj[indivial_i, :] = [ 5. 5. 58. 63.]
630     cord_individual_obj[indivial_i, :] = [ 6. 5. 58. 63.]
631     cord_individual_obj[indivial_i, :] = [ 7. 6. 38. 44.]
632     cord_individual_obj[indivial_i, :] = [ 8. 4. 38. 42.]
633     cord_individual_obj[indivial_i, :] = [ 9. 5. 38. 43.]
634
635     min(cord_individual_obj[:, 3]) = 13.0
636     historl_G_best_iter[iter, 3] = 13.0
637 Begin iteration:
638
639 iter = 38
640     cord_individual_obj[indivial_i, :] = [ 0. 6. 60. 66.]
641     cord_individual_obj[indivial_i, :] = [ 1. 5. 58. 63.]
642     cord_individual_obj[indivial_i, :] = [ 2. 6. 24. 30.]
643     cord_individual_obj[indivial_i, :] = [ 3. 5. 58. 63.]
644     cord_individual_obj[indivial_i, :] = [ 4. 5. 8. 13.]
645     cord_individual_obj[indivial_i, :] = [ 5. 5. 58. 63.]
646     cord_individual_obj[indivial_i, :] = [ 6. 5. 58. 63.]
647     cord_individual_obj[indivial_i, :] = [ 7. 6. 24. 30.]
648     cord_individual_obj[indivial_i, :] = [ 8. 5. 32. 37.]
649     cord_individual_obj[indivial_i, :] = [ 9. 5. 38. 43.]
650
651     min(cord_individual_obj[:, 3]) = 13.0
652     historl_G_best_iter[iter, 3] = 13.0
653 Begin iteration:
654
655 iter = 39
656     cord_individual_obj[indivial_i, :] = [ 0. 5. 8. 13.]
657     cord_individual_obj[indivial_i, :] = [ 1. 5. 60. 65.]
658     cord_individual_obj[indivial_i, :] = [ 2. 6. 12. 18.]
659     cord_individual_obj[indivial_i, :] = [ 3. 5. 48. 53.]
660     cord_individual_obj[indivial_i, :] = [ 4. 5. 58. 63.]
661     cord_individual_obj[indivial_i, :] = [ 5. 5. 40. 45.]
662     cord_individual_obj[indivial_i, :] = [ 6. 5. 32. 37.]
663     cord_individual_obj[indivial_i, :] = [ 7. 6. 38. 44.]
664     cord_individual_obj[indivial_i, :] = [ 8. 5. 32. 37.]
665     cord_individual_obj[indivial_i, :] = [ 9. 5. 26. 31.]
666
667     min(cord_individual_obj[:, 3]) = 13.0

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unknown

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668 historl_G_best_iter[iter, 3] = 13.0
669 Begin iteration:
670
671 iter = 40
672 cord_individual_obj[indivial_i, :] = [ 0. 6. 52. 58.]
673 cord_individual_obj[indivial_i, :] = [ 1. 5. 8. 13.]
674 cord_individual_obj[indivial_i, :] = [ 2. 6. 24. 30.]
675 cord_individual_obj[indivial_i, :] = [ 3. 5. 60. 65.]
676 cord_individual_obj[indivial_i, :] = [ 4. 5. 60. 65.]
677 cord_individual_obj[indivial_i, :] = [ 5. 5. 22. 27.]
678 cord_individual_obj[indivial_i, :] = [ 6. 5. 64. 69.]
679 cord_individual_obj[indivial_i, :] = [ 7. 6. 24. 30.]
680 cord_individual_obj[indivial_i, :] = [ 8. 5. 22. 27.]
681 cord_individual_obj[indivial_i, :] = [ 9. 5. 38. 43.]
682
683 min(cord_individual_obj[:, 3]) = 13.0
684 historl_G_best_iter[iter, 3] = 13.0
685 Iteration calculate over
686
687
688
689
690 All item are in Bin and:
691 Bin area = 1080
692 Real_area = 107.0
693 Proportion_of_area = 0.09907407407407408
694 BEST_CHROM =
695     berth: [ 8.5 26. 3. 13.5 17.5 21. ]
696     time: [0. 0. 0. 0. 0. ]
697     num_QC: [3. 2. 3. 4. 2. 2.]
698 Objective function values and some other indicators:
699 Obj0 = 5.00          Obj1 = 8.00          Obj0 + Obj1 = 13.00
700 Total movement of crane: 8.00
701 Total waiting time in berth position: 0.00
702 Total index of q during berthing: 597.00
703 Specific arrangement for each vessel:
704 V_id: 0           li: 5.0           xi: 8.5           bow of i: 6.0           tail of i: 11.0           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: 80.0           work load_i:
80.0           work load gap_i: 0
705 V_id: 1           li: 6.0           xi: 26.0           bow of i: 23.0           tail of i: 29.0           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: 120.0           work
load_i: 120.0           work load gap_i: 0
706 V_id: 2           li: 6.0           xi: 3.0           bow of i: 0.0           tail of i: 6.0           gama_i0: 0.0           gama_i1: 4.0
    .0           gama_i1 + 1: 5.0           gama_i1 - gama_i0: 4.0           duration_time_i: 5.0           demand_i: 260.0           work load_i:
260.0           work load gap_i: 0
707 V_id: 3           li: 5.0           xi: 13.5           bow of i: 11.0           tail of i: 16.0           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
load_i: 80.0           work load gap_i: 0
708 V_id: 4           li: 3.0           xi: 17.5           bow of i: 16.0           tail of i: 19.0           gama_i0: 0.0           gama_i1: 4
    .0           gama_i1 + 1: 5.0           gama_i1 - gama_i0: 4.0           duration_time_i: 5.0           demand_i: 200.0           work
load_i: 200.0           work load gap_i: 0
709 V_id: 5           li: 4.0           xi: 21.0           bow of i: 19.0           tail of i: 23.0           gama_i0: 0.0           gama_i1: 5
    .0           gama_i1 + 1: 6.0           gama_i1 - gama_i0: 5.0           duration_time_i: 6.0           demand_i: 220.0           work
load_i: 220.0           work load gap_i: 0
710
711 Algorithm finished and the total CPU time: 126 s
712 End
713
```