

unknown

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80 cord_individual_obj[indivial_i,:] = [16. 3. 1. 4.]
81 cord_individual_obj[indivial_i,:] = [17. 3. 1. 4.]
82 cord_individual_obj[indivial_i,:] = [18. 3. 1. 4.]
83 cord_individual_obj[indivial_i,:] = [19. 2. 1. 3.]
84 cord_individual_obj[indivial_i,:] = [20. 3. 1. 4.]
85 cord_individual_obj[indivial_i,:] = [21. 3. 1. 4.]
86 cord_individual_obj[indivial_i,:] = [22. 3. 1. 4.]
87 cord_individual_obj[indivial_i,:] = [23. 3. 1. 4.]
88 cord_individual_obj[indivial_i,:] = [24. 3. 1. 4.]
89
90 min(cord_individual_obj[:,3]) = 3.0
91 historl_G_best_iter[iter,3] = 3.0
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. 2. 5.]
97 cord_individual_obj[indivial_i,:] = [2. 3. 1. 4.]
98 cord_individual_obj[indivial_i,:] = [3. 3. 1. 4.]
99 cord_individual_obj[indivial_i,:] = [4. 3. 2. 5.]
100 cord_individual_obj[indivial_i,:] = [5. 3. 1. 4.]
101 cord_individual_obj[indivial_i,:] = [6. 2. 1. 3.]
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. 3. 3. 6.]
105 cord_individual_obj[indivial_i,:] = [10. 3. 1. 4.]
106 cord_individual_obj[indivial_i,:] = [11. 2. 2. 4.]
107 cord_individual_obj[indivial_i,:] = [12. 3. 1. 4.]
108 cord_individual_obj[indivial_i,:] = [13. 2. 2. 4.]
109 cord_individual_obj[indivial_i,:] = [14. 2. 2. 4.]
110 cord_individual_obj[indivial_i,:] = [15. 3. 1. 4.]
111 cord_individual_obj[indivial_i,:] = [16. 3. 1. 4.]
112 cord_individual_obj[indivial_i,:] = [17. 3. 2. 5.]
113 cord_individual_obj[indivial_i,:] = [18. 3. 1. 4.]
114 cord_individual_obj[indivial_i,:] = [19. 3. 1. 4.]
115 cord_individual_obj[indivial_i,:] = [20. 3. 1. 4.]
116 cord_individual_obj[indivial_i,:] = [21. 3. 1. 4.]
117 cord_individual_obj[indivial_i,:] = [22. 2. 1. 3.]
118 cord_individual_obj[indivial_i,:] = [23. 2. 2. 4.]
119 cord_individual_obj[indivial_i,:] = [24. 3. 2. 5.]
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. 3. 2. 5.]
127 cord_individual_obj[indivial_i,:] = [1. 3. 2. 5.]
128 cord_individual_obj[indivial_i,:] = [2. 3. 2. 5.]
129 cord_individual_obj[indivial_i,:] = [3. 3. 1. 4.]
130 cord_individual_obj[indivial_i,:] = [4. 3. 2. 5.]
131 cord_individual_obj[indivial_i,:] = [5. 2. 1. 3.]
132 cord_individual_obj[indivial_i,:] = [6. 2. 1. 3.]
133 cord_individual_obj[indivial_i,:] = [7. 2. 1. 3.]
134 cord_individual_obj[indivial_i,:] = [8. 3. 1. 4.]
135 cord_individual_obj[indivial_i,:] = [9. 2. 1. 3.]
136 cord_individual_obj[indivial_i,:] = [10. 3. 1. 4.]
137 cord_individual_obj[indivial_i,:] = [11. 3. 1. 4.]
138 cord_individual_obj[indivial_i,:] = [12. 3. 1. 4.]
139 cord_individual_obj[indivial_i,:] = [13. 2. 2. 4.]
140 cord_individual_obj[indivial_i,:] = [14. 3. 2. 5.]
141 cord_individual_obj[indivial_i,:] = [15. 2. 2. 4.]
142 cord_individual_obj[indivial_i,:] = [16. 3. 1. 4.]
143 cord_individual_obj[indivial_i,:] = [17. 3. 2. 5.]
144 cord_individual_obj[indivial_i,:] = [18. 3. 1. 4.]
145 cord_individual_obj[indivial_i,:] = [19. 2. 1. 3.]
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. 2. 5.]
149 cord_individual_obj[indivial_i,:] = [23. 2. 2. 4.]
150 cord_individual_obj[indivial_i,:] = [24. 3. 2. 5.]
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. 2. 5.]
159 cord_individual_obj[indivial_i,:] = [2. 3. 2. 5.]
160 cord_individual_obj[indivial_i,:] = [3. 2. 1. 3.]
161 cord_individual_obj[indivial_i,:] = [4. 3. 1. 4.]
162 cord_individual_obj[indivial_i,:] = [5. 2. 1. 3.]
163 cord_individual_obj[indivial_i,:] = [6. 3. 1. 4.]

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164 cord_individual_obj[indivial_i, :] = [7. 3. 1. 4.]
165 cord_individual_obj[indivial_i, :] = [8. 3. 1. 4.]
166 cord_individual_obj[indivial_i, :] = [9. 3. 2. 5.]
167 cord_individual_obj[indivial_i, :] = [10. 3. 1. 4.]
168 cord_individual_obj[indivial_i, :] = [11. 3. 1. 4.]
169 cord_individual_obj[indivial_i, :] = [12. 2. 2. 4.]
170 cord_individual_obj[indivial_i, :] = [13. 2. 1. 3.]
171 cord_individual_obj[indivial_i, :] = [14. 3. 1. 4.]
172 cord_individual_obj[indivial_i, :] = [15. 3. 2. 5.]
173 cord_individual_obj[indivial_i, :] = [16. 3. 1. 4.]
174 cord_individual_obj[indivial_i, :] = [17. 3. 2. 5.]
175 cord_individual_obj[indivial_i, :] = [18. 3. 1. 4.]
176 cord_individual_obj[indivial_i, :] = [19. 3. 1. 4.]
177 cord_individual_obj[indivial_i, :] = [20. 3. 1. 4.]
178 cord_individual_obj[indivial_i, :] = [21. 3. 1. 4.]
179 cord_individual_obj[indivial_i, :] = [22. 3. 1. 4.]
180 cord_individual_obj[indivial_i, :] = [23. 2. 2. 4.]
181 cord_individual_obj[indivial_i, :] = [24. 3. 2. 5.]
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. 2. 5.]
189 cord_individual_obj[indivial_i, :] = [1. 2. 1. 3.]
190 cord_individual_obj[indivial_i, :] = [2. 3. 2. 5.]
191 cord_individual_obj[indivial_i, :] = [3. 2. 1. 3.]
192 cord_individual_obj[indivial_i, :] = [4. 3. 1. 4.]
193 cord_individual_obj[indivial_i, :] = [5. 2. 1. 3.]
194 cord_individual_obj[indivial_i, :] = [6. 3. 1. 4.]
195 cord_individual_obj[indivial_i, :] = [7. 3. 1. 4.]
196 cord_individual_obj[indivial_i, :] = [8. 3. 1. 4.]
197 cord_individual_obj[indivial_i, :] = [9. 2. 2. 4.]
198 cord_individual_obj[indivial_i, :] = [10. 3. 1. 4.]
199 cord_individual_obj[indivial_i, :] = [11. 3. 2. 5.]
200 cord_individual_obj[indivial_i, :] = [12. 3. 2. 5.]
201 cord_individual_obj[indivial_i, :] = [13. 2. 2. 4.]
202 cord_individual_obj[indivial_i, :] = [14. 3. 1. 4.]
203 cord_individual_obj[indivial_i, :] = [15. 3. 2. 5.]
204 cord_individual_obj[indivial_i, :] = [16. 2. 1. 3.]
205 cord_individual_obj[indivial_i, :] = [17. 3. 2. 5.]
206 cord_individual_obj[indivial_i, :] = [18. 3. 1. 4.]
207 cord_individual_obj[indivial_i, :] = [19. 2. 1. 3.]
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. 2. 1. 3.]
212 cord_individual_obj[indivial_i, :] = [24. 3. 2. 5.]
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. 2. 1. 3.]
220 cord_individual_obj[indivial_i, :] = [1. 3. 2. 5.]
221 cord_individual_obj[indivial_i, :] = [2. 3. 2. 5.]
222 cord_individual_obj[indivial_i, :] = [3. 3. 1. 4.]
223 cord_individual_obj[indivial_i, :] = [4. 3. 1. 4.]
224 cord_individual_obj[indivial_i, :] = [5. 2. 1. 3.]
225 cord_individual_obj[indivial_i, :] = [6. 2. 1. 3.]
226 cord_individual_obj[indivial_i, :] = [7. 2. 1. 3.]
227 cord_individual_obj[indivial_i, :] = [8. 2. 1. 3.]
228 cord_individual_obj[indivial_i, :] = [9. 3. 2. 5.]
229 cord_individual_obj[indivial_i, :] = [10. 3. 1. 4.]
230 cord_individual_obj[indivial_i, :] = [11. 3. 1. 4.]
231 cord_individual_obj[indivial_i, :] = [12. 2. 1. 3.]
232 cord_individual_obj[indivial_i, :] = [13. 2. 2. 4.]
233 cord_individual_obj[indivial_i, :] = [14. 3. 1. 4.]
234 cord_individual_obj[indivial_i, :] = [15. 3. 2. 5.]
235 cord_individual_obj[indivial_i, :] = [16. 2. 1. 3.]
236 cord_individual_obj[indivial_i, :] = [17. 3. 2. 5.]
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. 3. 1. 4.]
242 cord_individual_obj[indivial_i, :] = [23. 2. 2. 4.]
243 cord_individual_obj[indivial_i, :] = [24. 2. 2. 4.]
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. 2. 1. 3.]
252 cord_individual_obj[indivial_i, :] = [2. 3. 2. 5.]
253 cord_individual_obj[indivial_i, :] = [3. 2. 1. 3.]
254 cord_individual_obj[indivial_i, :] = [4. 2. 2. 4.]
255 cord_individual_obj[indivial_i, :] = [5. 2. 1. 3.]
256 cord_individual_obj[indivial_i, :] = [6. 3. 1. 4.]
257 cord_individual_obj[indivial_i, :] = [7. 3. 1. 4.]
258 cord_individual_obj[indivial_i, :] = [8. 3. 2. 5.]
259 cord_individual_obj[indivial_i, :] = [9. 4. 1. 5.]
260 cord_individual_obj[indivial_i, :] = [10. 4. 17. 21.]
261 cord_individual_obj[indivial_i, :] = [11. 3. 1. 4.]
262 cord_individual_obj[indivial_i, :] = [12. 3. 3. 6.]
263 cord_individual_obj[indivial_i, :] = [13. 3. 1. 4.]
264 cord_individual_obj[indivial_i, :] = [14. 3. 1. 4.]
265 cord_individual_obj[indivial_i, :] = [15. 2. 2. 4.]
266 cord_individual_obj[indivial_i, :] = [16. 4. 1. 5.]
267 cord_individual_obj[indivial_i, :] = [17. 3. 2. 5.]
268 cord_individual_obj[indivial_i, :] = [18. 2. 1. 3.]
269 cord_individual_obj[indivial_i, :] = [19. 2. 2. 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. 2. 5.]
273 cord_individual_obj[indivial_i, :] = [23. 3. 1. 4.]
274 cord_individual_obj[indivial_i, :] = [24. 3. 2. 5.]
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. 3. 1. 4.]
282 cord_individual_obj[indivial_i, :] = [1. 3. 2. 5.]
283 cord_individual_obj[indivial_i, :] = [2. 3. 1. 4.]
284 cord_individual_obj[indivial_i, :] = [3. 2. 1. 3.]
285 cord_individual_obj[indivial_i, :] = [4. 3. 2. 5.]
286 cord_individual_obj[indivial_i, :] = [5. 2. 1. 3.]
287 cord_individual_obj[indivial_i, :] = [6. 3. 1. 4.]
288 cord_individual_obj[indivial_i, :] = [7. 2. 1. 3.]
289 cord_individual_obj[indivial_i, :] = [8. 3. 2. 5.]
290 cord_individual_obj[indivial_i, :] = [9. 3. 1. 4.]
291 cord_individual_obj[indivial_i, :] = [10. 2. 1. 3.]
292 cord_individual_obj[indivial_i, :] = [11. 2. 2. 4.]
293 cord_individual_obj[indivial_i, :] = [12. 2. 2. 4.]
294 cord_individual_obj[indivial_i, :] = [13. 2. 1. 3.]
295 cord_individual_obj[indivial_i, :] = [14. 3. 1. 4.]
296 cord_individual_obj[indivial_i, :] = [15. 3. 2. 5.]
297 cord_individual_obj[indivial_i, :] = [16. 3. 1. 4.]
298 cord_individual_obj[indivial_i, :] = [17. 3. 2. 5.]
299 cord_individual_obj[indivial_i, :] = [18. 3. 1. 4.]
300 cord_individual_obj[indivial_i, :] = [19. 2. 1. 3.]
301 cord_individual_obj[indivial_i, :] = [20. 3. 1. 4.]
302 cord_individual_obj[indivial_i, :] = [21. 3. 1. 4.]
303 cord_individual_obj[indivial_i, :] = [22. 3. 1. 4.]
304 cord_individual_obj[indivial_i, :] = [23. 2. 2. 4.]
305 cord_individual_obj[indivial_i, :] = [24. 3. 2. 5.]
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. 1. 4.]
313 cord_individual_obj[indivial_i, :] = [1. 2. 1. 3.]
314 cord_individual_obj[indivial_i, :] = [2. 3. 2. 5.]
315 cord_individual_obj[indivial_i, :] = [3. 2. 1. 3.]
316 cord_individual_obj[indivial_i, :] = [4. 3. 1. 4.]
317 cord_individual_obj[indivial_i, :] = [5. 3. 1. 4.]
318 cord_individual_obj[indivial_i, :] = [6. 3. 1. 4.]
319 cord_individual_obj[indivial_i, :] = [7. 2. 1. 3.]
320 cord_individual_obj[indivial_i, :] = [8. 3. 2. 5.]
321 cord_individual_obj[indivial_i, :] = [9. 2. 1. 3.]
322 cord_individual_obj[indivial_i, :] = [10. 3. 1. 4.]
323 cord_individual_obj[indivial_i, :] = [11. 3. 2. 5.]
324 cord_individual_obj[indivial_i, :] = [12. 2. 2. 4.]
325 cord_individual_obj[indivial_i, :] = [13. 2. 1. 3.]
326 cord_individual_obj[indivial_i, :] = [14. 3. 1. 4.]
327 cord_individual_obj[indivial_i, :] = [15. 3. 1. 4.]
328 cord_individual_obj[indivial_i, :] = [16. 3. 1. 4.]
329 cord_individual_obj[indivial_i, :] = [17. 3. 1. 4.]
330 cord_individual_obj[indivial_i, :] = [18. 3. 1. 4.]
331 cord_individual_obj[indivial_i, :] = [19. 3. 1. 4.]

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unknown

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332     cord_individual_obj[indivial_i, :] = [20. 3. 1. 4.]  
333     cord_individual_obj[indivial_i, :] = [21. 3. 1. 4.]  
334     cord_individual_obj[indivial_i, :] = [22. 3. 2. 5.]  
335     cord_individual_obj[indivial_i, :] = [23. 2. 1. 3.]  
336     cord_individual_obj[indivial_i, :] = [24. 3. 2. 5.]  
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. 1. 4.]  
344     cord_individual_obj[indivial_i, :] = [1. 3. 1. 4.]  
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. 1. 4.]  
348     cord_individual_obj[indivial_i, :] = [5. 3. 1. 4.]  
349     cord_individual_obj[indivial_i, :] = [6. 3. 1. 4.]  
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. 1. 4.]  
354     cord_individual_obj[indivial_i, :] = [11. 2. 1. 3.]  
355     cord_individual_obj[indivial_i, :] = [12. 2. 2. 4.]  
356     cord_individual_obj[indivial_i, :] = [13. 2. 1. 3.]  
357     cord_individual_obj[indivial_i, :] = [14. 2. 1. 3.]  
358     cord_individual_obj[indivial_i, :] = [15. 3. 2. 5.]  
359     cord_individual_obj[indivial_i, :] = [16. 2. 1. 3.]  
360     cord_individual_obj[indivial_i, :] = [17. 3. 1. 4.]  
361     cord_individual_obj[indivial_i, :] = [18. 4. 3. 7.]  
362     cord_individual_obj[indivial_i, :] = [19. 3. 1. 4.]  
363     cord_individual_obj[indivial_i, :] = [20. 3. 1. 4.]  
364     cord_individual_obj[indivial_i, :] = [21. 3. 1. 4.]  
365     cord_individual_obj[indivial_i, :] = [22. 2. 1. 3.]  
366     cord_individual_obj[indivial_i, :] = [23. 2. 1. 3.]  
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. 3. 6.]  
375     cord_individual_obj[indivial_i, :] = [1. 3. 2. 5.]  
376     cord_individual_obj[indivial_i, :] = [2. 3. 2. 5.]  
377     cord_individual_obj[indivial_i, :] = [3. 3. 2. 5.]  
378     cord_individual_obj[indivial_i, :] = [4. 2. 1. 3.]  
379     cord_individual_obj[indivial_i, :] = [5. 3. 1. 4.]  
380     cord_individual_obj[indivial_i, :] = [6. 3. 2. 5.]  
381     cord_individual_obj[indivial_i, :] = [7. 3. 2. 5.]  
382     cord_individual_obj[indivial_i, :] = [8. 3. 2. 5.]  
383     cord_individual_obj[indivial_i, :] = [9. 2. 1. 3.]  
384     cord_individual_obj[indivial_i, :] = [10. 3. 1. 4.]  
385     cord_individual_obj[indivial_i, :] = [11. 3. 2. 5.]  
386     cord_individual_obj[indivial_i, :] = [12. 2. 2. 4.]  
387     cord_individual_obj[indivial_i, :] = [13. 2. 1. 3.]  
388     cord_individual_obj[indivial_i, :] = [14. 4. 1. 5.]  
389     cord_individual_obj[indivial_i, :] = [15. 3. 1. 4.]  
390     cord_individual_obj[indivial_i, :] = [16. 2. 1. 3.]  
391     cord_individual_obj[indivial_i, :] = [17. 3. 2. 5.]  
392     cord_individual_obj[indivial_i, :] = [18. 2. 1. 3.]  
393     cord_individual_obj[indivial_i, :] = [19. 2. 2. 4.]  
394     cord_individual_obj[indivial_i, :] = [20. 2. 1. 3.]  
395     cord_individual_obj[indivial_i, :] = [21. 4. 1. 5.]  
396     cord_individual_obj[indivial_i, :] = [22. 3. 2. 5.]  
397     cord_individual_obj[indivial_i, :] = [23. 3. 1. 4.]  
398     cord_individual_obj[indivial_i, :] = [24. 3. 2. 5.]  
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. 2. 1. 3.]  
406     cord_individual_obj[indivial_i, :] = [1. 3. 1. 4.]  
407     cord_individual_obj[indivial_i, :] = [2. 2. 2. 4.]  
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. 1. 4.]  
411     cord_individual_obj[indivial_i, :] = [6. 3. 1. 4.]  
412     cord_individual_obj[indivial_i, :] = [7. 3. 2. 5.]  
413     cord_individual_obj[indivial_i, :] = [8. 3. 2. 5.]  
414     cord_individual_obj[indivial_i, :] = [9. 3. 1. 4.]  
415     cord_individual_obj[indivial_i, :] = [10. 3. 1. 4.]
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416 cord_individual_obj[indivial_i,:] = [11. 3. 2. 5.]
417 cord_individual_obj[indivial_i,:] = [12. 3. 2. 5.]
418 cord_individual_obj[indivial_i,:] = [13. 2. 1. 3.]
419 cord_individual_obj[indivial_i,:] = [14. 3. 1. 4.]
420 cord_individual_obj[indivial_i,:] = [15. 3. 2. 5.]
421 cord_individual_obj[indivial_i,:] = [16. 2. 1. 3.]
422 cord_individual_obj[indivial_i,:] = [17. 3. 2. 5.]
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. 2. 5.]
427 cord_individual_obj[indivial_i,:] = [22. 2. 1. 3.]
428 cord_individual_obj[indivial_i,:] = [23. 2. 2. 4.]
429 cord_individual_obj[indivial_i,:] = [24. 3. 2. 5.]
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. 2. 5.]
437 cord_individual_obj[indivial_i,:] = [1. 3. 2. 5.]
438 cord_individual_obj[indivial_i,:] = [2. 3. 2. 5.]
439 cord_individual_obj[indivial_i,:] = [3. 2. 1. 3.]
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. 3. 2. 5.]
443 cord_individual_obj[indivial_i,:] = [7. 3. 2. 5.]
444 cord_individual_obj[indivial_i,:] = [8. 2. 2. 4.]
445 cord_individual_obj[indivial_i,:] = [9. 3. 1. 4.]
446 cord_individual_obj[indivial_i,:] = [10. 2. 2. 4.]
447 cord_individual_obj[indivial_i,:] = [11. 3. 1. 4.]
448 cord_individual_obj[indivial_i,:] = [12. 2. 2. 4.]
449 cord_individual_obj[indivial_i,:] = [13. 2. 1. 3.]
450 cord_individual_obj[indivial_i,:] = [14. 3. 1. 4.]
451 cord_individual_obj[indivial_i,:] = [15. 3. 2. 5.]
452 cord_individual_obj[indivial_i,:] = [16. 2. 1. 3.]
453 cord_individual_obj[indivial_i,:] = [17. 3. 2. 5.]
454 cord_individual_obj[indivial_i,:] = [18. 3. 1. 4.]
455 cord_individual_obj[indivial_i,:] = [19. 3. 2. 5.]
456 cord_individual_obj[indivial_i,:] = [20. 3. 1. 4.]
457 cord_individual_obj[indivial_i,:] = [21. 3. 3. 6.]
458 cord_individual_obj[indivial_i,:] = [22. 3. 3. 6.]
459 cord_individual_obj[indivial_i,:] = [23. 2. 1. 3.]
460 cord_individual_obj[indivial_i,:] = [24. 3. 2. 5.]
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. 2. 5.]
468 cord_individual_obj[indivial_i,:] = [1. 3. 2. 5.]
469 cord_individual_obj[indivial_i,:] = [2. 3. 2. 5.]
470 cord_individual_obj[indivial_i,:] = [3. 3. 1. 4.]
471 cord_individual_obj[indivial_i,:] = [4. 3. 2. 5.]
472 cord_individual_obj[indivial_i,:] = [5. 3. 1. 4.]
473 cord_individual_obj[indivial_i,:] = [6. 2. 2. 4.]
474 cord_individual_obj[indivial_i,:] = [7. 3. 1. 4.]
475 cord_individual_obj[indivial_i,:] = [8. 2. 1. 3.]
476 cord_individual_obj[indivial_i,:] = [9. 3. 1. 4.]
477 cord_individual_obj[indivial_i,:] = [10. 3. 1. 4.]
478 cord_individual_obj[indivial_i,:] = [11. 3. 2. 5.]
479 cord_individual_obj[indivial_i,:] = [12. 3. 1. 4.]
480 cord_individual_obj[indivial_i,:] = [13. 2. 2. 4.]
481 cord_individual_obj[indivial_i,:] = [14. 3. 2. 5.]
482 cord_individual_obj[indivial_i,:] = [15. 3. 2. 5.]
483 cord_individual_obj[indivial_i,:] = [16. 2. 1. 3.]
484 cord_individual_obj[indivial_i,:] = [17. 3. 2. 5.]
485 cord_individual_obj[indivial_i,:] = [18. 3. 1. 4.]
486 cord_individual_obj[indivial_i,:] = [19. 3. 1. 4.]
487 cord_individual_obj[indivial_i,:] = [20. 3. 1. 4.]
488 cord_individual_obj[indivial_i,:] = [21. 2. 1. 3.]
489 cord_individual_obj[indivial_i,:] = [22. 3. 3. 6.]
490 cord_individual_obj[indivial_i,:] = [23. 2. 2. 4.]
491 cord_individual_obj[indivial_i,:] = [24. 2. 2. 4.]
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. 2. 5.]
499 cord_individual_obj[indivial_i,:] = [1. 3. 2. 5.]

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500 cord_individual_obj[indivial_i, :] = [2. 3. 2. 5.]
501 cord_individual_obj[indivial_i, :] = [3. 3. 2. 5.]
502 cord_individual_obj[indivial_i, :] = [4. 3. 2. 5.]
503 cord_individual_obj[indivial_i, :] = [5. 2. 1. 3.]
504 cord_individual_obj[indivial_i, :] = [6. 2. 1. 3.]
505 cord_individual_obj[indivial_i, :] = [7. 2. 2. 4.]
506 cord_individual_obj[indivial_i, :] = [8. 2. 1. 3.]
507 cord_individual_obj[indivial_i, :] = [9. 3. 1. 4.]
508 cord_individual_obj[indivial_i, :] = [10. 3. 1. 4.]
509 cord_individual_obj[indivial_i, :] = [11. 3. 1. 4.]
510 cord_individual_obj[indivial_i, :] = [12. 3. 1. 4.]
511 cord_individual_obj[indivial_i, :] = [13. 2. 1. 3.]
512 cord_individual_obj[indivial_i, :] = [14. 3. 1. 4.]
513 cord_individual_obj[indivial_i, :] = [15. 3. 2. 5.]
514 cord_individual_obj[indivial_i, :] = [16. 2. 2. 4.]
515 cord_individual_obj[indivial_i, :] = [17. 3. 2. 5.]
516 cord_individual_obj[indivial_i, :] = [18. 3. 1. 4.]
517 cord_individual_obj[indivial_i, :] = [19. 2. 2. 4.]
518 cord_individual_obj[indivial_i, :] = [20. 2. 1. 3.]
519 cord_individual_obj[indivial_i, :] = [21. 3. 1. 4.]
520 cord_individual_obj[indivial_i, :] = [22. 2. 1. 3.]
521 cord_individual_obj[indivial_i, :] = [23. 2. 1. 3.]
522 cord_individual_obj[indivial_i, :] = [24. 2. 2. 4.]
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. 2. 1. 3.]
530 cord_individual_obj[indivial_i, :] = [1. 3. 1. 4.]
531 cord_individual_obj[indivial_i, :] = [2. 3. 1. 4.]
532 cord_individual_obj[indivial_i, :] = [3. 3. 1. 4.]
533 cord_individual_obj[indivial_i, :] = [4. 3. 1. 4.]
534 cord_individual_obj[indivial_i, :] = [5. 2. 1. 3.]
535 cord_individual_obj[indivial_i, :] = [6. 2. 2. 4.]
536 cord_individual_obj[indivial_i, :] = [7. 3. 1. 4.]
537 cord_individual_obj[indivial_i, :] = [8. 2. 1. 3.]
538 cord_individual_obj[indivial_i, :] = [9. 3. 1. 4.]
539 cord_individual_obj[indivial_i, :] = [10. 3. 1. 4.]
540 cord_individual_obj[indivial_i, :] = [11. 2. 1. 3.]
541 cord_individual_obj[indivial_i, :] = [12. 3. 1. 4.]
542 cord_individual_obj[indivial_i, :] = [13. 2. 1. 3.]
543 cord_individual_obj[indivial_i, :] = [14. 2. 1. 3.]
544 cord_individual_obj[indivial_i, :] = [15. 2. 1. 3.]
545 cord_individual_obj[indivial_i, :] = [16. 3. 1. 4.]
546 cord_individual_obj[indivial_i, :] = [17. 3. 1. 4.]
547 cord_individual_obj[indivial_i, :] = [18. 3. 1. 4.]
548 cord_individual_obj[indivial_i, :] = [19. 3. 1. 4.]
549 cord_individual_obj[indivial_i, :] = [20. 3. 1. 4.]
550 cord_individual_obj[indivial_i, :] = [21. 2. 1. 3.]
551 cord_individual_obj[indivial_i, :] = [22. 4. 3. 7.]
552 cord_individual_obj[indivial_i, :] = [23. 2. 1. 3.]
553 cord_individual_obj[indivial_i, :] = [24. 2. 1. 3.]
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. 1. 4.]
563 cord_individual_obj[indivial_i, :] = [3. 3. 1. 4.]
564 cord_individual_obj[indivial_i, :] = [4. 3. 1. 4.]
565 cord_individual_obj[indivial_i, :] = [5. 2. 1. 3.]
566 cord_individual_obj[indivial_i, :] = [6. 4. 1. 5.]
567 cord_individual_obj[indivial_i, :] = [7. 2. 1. 3.]
568 cord_individual_obj[indivial_i, :] = [8. 2. 1. 3.]
569 cord_individual_obj[indivial_i, :] = [9. 2. 1. 3.]
570 cord_individual_obj[indivial_i, :] = [10. 2. 1. 3.]
571 cord_individual_obj[indivial_i, :] = [11. 3. 2. 5.]
572 cord_individual_obj[indivial_i, :] = [12. 3. 1. 4.]
573 cord_individual_obj[indivial_i, :] = [13. 2. 1. 3.]
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. 3. 3. 6.]
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. 3. 1. 4.]
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. 2. 2. 4.]

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584     cord_individual_obj[indivial_i, :] = [24. 2. 1. 3.]
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. 2. 1. 3.]
597     cord_individual_obj[indivial_i, :] = [6. 2. 2. 4.]
598     cord_individual_obj[indivial_i, :] = [7. 3. 1. 4.]
599     cord_individual_obj[indivial_i, :] = [8. 2. 1. 3.]
600     cord_individual_obj[indivial_i, :] = [9. 3. 1. 4.]
601     cord_individual_obj[indivial_i, :] = [10. 3. 1. 4.]
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. 2. 1. 3.]
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. 3. 1. 4.]
610     cord_individual_obj[indivial_i, :] = [19. 2. 1. 3.]
611     cord_individual_obj[indivial_i, :] = [20. 3. 1. 4.]
612     cord_individual_obj[indivial_i, :] = [21. 3. 1. 4.]
613     cord_individual_obj[indivial_i, :] = [22. 3. 3. 6.]
614     cord_individual_obj[indivial_i, :] = [23. 2. 1. 3.]
615     cord_individual_obj[indivial_i, :] = [24. 3. 1. 4.]
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. 3. 6.]
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. 2. 1. 3.]
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. 3. 1. 4.]
629     cord_individual_obj[indivial_i, :] = [7. 2. 1. 3.]
630     cord_individual_obj[indivial_i, :] = [8. 2. 1. 3.]
631     cord_individual_obj[indivial_i, :] = [9. 3. 1. 4.]
632     cord_individual_obj[indivial_i, :] = [10. 3. 31. 34.]
633     cord_individual_obj[indivial_i, :] = [11. 3. 2. 5.]
634     cord_individual_obj[indivial_i, :] = [12. 2. 1. 3.]
635     cord_individual_obj[indivial_i, :] = [13. 2. 1. 3.]
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. 3. 3. 6.]
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. 1. 4.]
642     cord_individual_obj[indivial_i, :] = [20. 3. 1. 4.]
643     cord_individual_obj[indivial_i, :] = [21. 3. 1. 4.]
644     cord_individual_obj[indivial_i, :] = [22. 2. 1. 3.]
645     cord_individual_obj[indivial_i, :] = [23. 2. 1. 3.]
646     cord_individual_obj[indivial_i, :] = [24. 2. 1. 3.]
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. 3. 1. 4.]
654     cord_individual_obj[indivial_i, :] = [1. 3. 2. 5.]
655     cord_individual_obj[indivial_i, :] = [2. 3. 1. 4.]
656     cord_individual_obj[indivial_i, :] = [3. 2. 1. 3.]
657     cord_individual_obj[indivial_i, :] = [4. 3. 2. 5.]
658     cord_individual_obj[indivial_i, :] = [5. 3. 1. 4.]
659     cord_individual_obj[indivial_i, :] = [6. 2. 2. 4.]
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. 2. 1. 3.]
663     cord_individual_obj[indivial_i, :] = [10. 2. 1. 3.]
664     cord_individual_obj[indivial_i, :] = [11. 3. 2. 5.]
665     cord_individual_obj[indivial_i, :] = [12. 3. 1. 4.]
666     cord_individual_obj[indivial_i, :] = [13. 2. 1. 3.]
667     cord_individual_obj[indivial_i, :] = [14. 3. 2. 5.]

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668 cord_individual_obj[indivial_i, :] = [15. 3. 1. 4.]
669 cord_individual_obj[indivial_i, :] = [16. 2. 2. 4.]
670 cord_individual_obj[indivial_i, :] = [17. 3. 1. 4.]
671 cord_individual_obj[indivial_i, :] = [18. 3. 1. 4.]
672 cord_individual_obj[indivial_i, :] = [19. 3. 1. 4.]
673 cord_individual_obj[indivial_i, :] = [20. 2. 1. 3.]
674 cord_individual_obj[indivial_i, :] = [21. 3. 1. 4.]
675 cord_individual_obj[indivial_i, :] = [22. 4. 3. 7.]
676 cord_individual_obj[indivial_i, :] = [23. 3. 2. 5.]
677 cord_individual_obj[indivial_i, :] = [24. 3. 2. 5.]
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 = 74.0
689 Proportion_of_area = 0.06851851851851852
690 BEST_CHROM =
691     berth: [ 2. 7.5 12.5 18. 18.5]
692     time: [0. 0. 0. 1. 0.]
693     num_QC: [3. 5. 3. 3. 4.]
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: 213.00
699 Specific arrangement for each vessel:
700
    V_id: 0      li: 4.0      xi: 2.0      bow of i: 0.0      tail of i: 4.0      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:
701
    140.0      work load gap_i: 0
    V_id: 1      li: 7.0      xi: 7.5      bow of i: 4.0      tail of i: 11.0      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: 120.0      work load_i:
702
    120.0      work load gap_i: 0
    V_id: 2      li: 3.0      xi: 12.5      bow of i: 11.0      tail of i: 14.0      gama_i0: 0.0      gama_i1: 2
    .           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
    V_id: 3      li: 8.0      xi: 18.0      bow of i: 14.0      tail of i: 22.0      gama_i0: 1.0      gama_i1: 1
    .           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
    V_id: 4      li: 9.0      xi: 18.5      bow of i: 14.0      tail of i: 23.0      gama_i0: 0.0      gama_i1: 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
705
706 Algorithm finished and the total CPU time: 134 s
707 End
708

```