```
1  "E:\1 □□□□\3 □□□□□\1 □□□□□□\1 □□□□□□□□\1_□□□□□□_□□□□\1_LW_□□□□2\6 □□□□\2 python code\01_My_Python_Code\Scripts\python.
   exe" "D:\Python\Pycharm\setroute\PyCharm Community Edition 2021.2.3\plugins\python-ce\helpers\pydev\pydevconsole.py" --mode=client --port=12526
2
3  import sys; print('Python %s on %s' % (sys.version, sys.platform))
4  sys.path.extend(['E:\\1 □□□□\\3 □□□□□\\1 □□□□□□\\1 □□□□□□□□\\1_□□□□□□_□□□□\\1_LW_□□□□2\\6 □□□□\\2 python code\\
   01_My_Python_Code', 'E:/1 □□□□/3 □□□□□/1 □□□□□□/1 □□□□□□□□/1_□□□□□□_□□□□/1_LW_□□□□2/6 □□□□/2 python code/
   01_My_Python_Code'])
5
6  PyDev console: starting.
7
8  Python 3.9.7 (tags/v3.9.7:1016ef3, Aug 30 2021, 20:19:38) [MSC v.1929 64 bit (AMD64)] on win32
9  >>> runfile('E:/1 □□□□/3 □□□□□/1 □□□□□□/1 □□□□□□□□/1_□□□□□□_□□□□/1_LW_□□□□2/6 □□□□/2 python code/01_My_Python_Code/
   main_BACASP_offical_PSO_2D_Bin_berth_line.py', wdir='E:/1 □□□□/3 □□□□□/1 □□□□□□/1 □□□□□□□□/1_□□□□□□_□□□□/1_LW_□□□□2/6
   □□□□/2 python code/01_My_Python_Code')
10 Backend TkAgg is interactive backend. Turning interactive mode on.
11 Waiting 1s.....
12
13 This is the  R_6_1 _standerd_test.xlsx  optimization process.
14
15 Start
16    Read basic data
17       V = 6
18       T = 36
19       Q = 23
20       L = 30
21    PSO parameter setting:
22       Trail = 25
23       maxIter_num = 10
24       W_inertia = 1.0
25       oder_type_num = 20
26       c1 = 2.5
27       c2 = 2.0
28       r1 = 0.21586348517764853
29       r2 = 0.21586348517764853
30 Begin iteration:
31
32 iter = 0
33       cord_individul_obj[indivial_i, :] = [ 0.  5. 44. 49.]
34       cord_individul_obj[indivial_i, :] = [ 1.  4. 106. 110.]
35       cord_individul_obj[indivial_i, :] = [ 2.  4. 44. 48.]
36       cord_individul_obj[indivial_i, :] = [ 3.  4. 38. 42.]
37       cord_individul_obj[indivial_i, :] = [ 4.  3. 18. 21.]
38       cord_individul_obj[indivial_i, :] = [ 5.  5. 76. 81.]
39       cord_individul_obj[indivial_i, :] = [ 6.  5.  8. 13.]
40       cord_individul_obj[indivial_i, :] = [ 7.  6. 18. 24.]
41       cord_individul_obj[indivial_i, :] = [ 8.  5. 64. 69.]
42       cord_individul_obj[indivial_i, :] = [ 9.  6. 24. 30.]
43       cord_individul_obj[indivial_i, :] = [10.  5. 60. 65.]
44       cord_individul_obj[indivial_i, :] = [11.  4. 82. 86.]
45       cord_individul_obj[indivial_i, :] = [12.  4. 52. 56.]
46       cord_individul_obj[indivial_i, :] = [13.  6. 72. 78.]
47       cord_individul_obj[indivial_i, :] = [ 14.  4.  98. 102.]
48       cord_individul_obj[indivial_i, :] = [ 15.  3. 124. 127.]
49       cord_individul_obj[indivial_i, :] = [16.  4. 44. 48.]
50       cord_individul_obj[indivial_i, :] = [17.  6.  8. 14.]
51       cord_individul_obj[indivial_i, :] = [18.  6. 88. 94.]
52       cord_individul_obj[indivial_i, :] = [19.  3. 96. 99.]
53
54    min(cord_individul_obj[:, 3]) = 13.0
55    historl_G_best_iter[iter, 3] = 13.0
56 Begin iteration:
57
58 iter = 1
59       cord_individul_obj[indivial_i, :] = [ 0.  5. 52. 57.]
60       cord_individul_obj[indivial_i, :] = [ 1.  4. 74. 78.]
61       cord_individul_obj[indivial_i, :] = [ 2.  5. 62. 67.]
62       cord_individul_obj[indivial_i, :] = [ 3.  5. 48. 53.]
63       cord_individul_obj[indivial_i, :] = [ 4.  5. 18. 23.]
64       cord_individul_obj[indivial_i, :] = [ 5.  5. 32. 37.]
65       cord_individul_obj[indivial_i, :] = [ 6.  6. 28. 34.]
66       cord_individul_obj[indivial_i, :] = [ 7.  6. 12. 18.]
67       cord_individul_obj[indivial_i, :] = [ 8.  3. 100. 103.]
68       cord_individul_obj[indivial_i, :] = [ 9.  6. 28. 34.]
69       cord_individul_obj[indivial_i, :] = [10.  5. 40. 45.]
70       cord_individul_obj[indivial_i, :] = [11.  6. 28. 34.]
71       cord_individul_obj[indivial_i, :] = [12.  4. 38. 42.]
72       cord_individul_obj[indivial_i, :] = [13.  5. 28. 33.]
73       cord_individul_obj[indivial_i, :] = [14.  4. 44. 48.]
74       cord_individul_obj[indivial_i, :] = [15.  5.  8. 13.]
75       cord_individul_obj[indivial_i, :] = [16.  4. 18. 22.]
76       cord_individul_obj[indivial_i, :] = [17.  5. 12. 17.]
77       cord_individul_obj[indivial_i, :] = [18.  6. 68. 74.]
78       cord_individul_obj[indivial_i, :] = [19.  6. 36. 42.]
79
```

```
 80      min(cord_individul_obj[:, 3]) = 13.0
 81      historl_G_best_iter[iter, 3] = 13.0
 82   Begin iteration:
 83
 84   iter = 2
 85        cord_individul_obj[indivial_i, :] = [ 0.  6. 84. 90.]
 86        cord_individul_obj[indivial_i, :] = [ 1.  4. 80. 84.]
 87        cord_individul_obj[indivial_i, :] = [ 2.  6. 90. 96.]
 88        cord_individul_obj[indivial_i, :] = [ 3.  6. 24. 30.]
 89        cord_individul_obj[indivial_i, :] = [ 4.  5. 66. 71.]
 90        cord_individul_obj[indivial_i, :] = [ 5.  6. 80. 86.]
 91        cord_individul_obj[indivial_i, :] = [ 6.  5. 62. 67.]
 92        cord_individul_obj[indivial_i, :] = [ 7.  4. 68. 72.]
 93        cord_individul_obj[indivial_i, :] = [ 8.  5.  8. 13.]
 94        cord_individul_obj[indivial_i, :] = [ 9.  4. 58. 62.]
 95        cord_individul_obj[indivial_i, :] = [10.  6. 12. 18.]
 96        cord_individul_obj[indivial_i, :] = [11.  5. 76. 81.]
 97        cord_individul_obj[indivial_i, :] = [12.  6. 66. 72.]
 98        cord_individul_obj[indivial_i, :] = [13.  6. 58. 64.]
 99        cord_individul_obj[indivial_i, :] = [14.  6.  8. 14.]
100        cord_individul_obj[indivial_i, :] = [15.  4. 48. 52.]
101        cord_individul_obj[indivial_i, :] = [16.  5. 60. 65.]
102        cord_individul_obj[indivial_i, :] = [17.  5. 56. 61.]
103        cord_individul_obj[indivial_i, :] = [18.  3. 84. 87.]
104        cord_individul_obj[indivial_i, :] = [19.  6. 58. 64.]
105
106      min(cord_individul_obj[:, 3]) = 13.0
107      historl_G_best_iter[iter, 3] = 13.0
108   Begin iteration:
109
110   iter = 3
111        cord_individul_obj[indivial_i, :] = [ 0.  6. 48. 54.]
112        cord_individul_obj[indivial_i, :] = [ 1.  5. 34. 39.]
113        cord_individul_obj[indivial_i, :] = [ 2.  5.  8. 13.]
114        cord_individul_obj[indivial_i, :] = [ 3.  5. 36. 41.]
115        cord_individul_obj[indivial_i, :] = [ 4.  6. 28. 34.]
116        cord_individul_obj[indivial_i, :] = [ 5.  5. 36. 41.]
117        cord_individul_obj[indivial_i, :] = [ 6.  6. 28. 34.]
118        cord_individul_obj[indivial_i, :] = [ 7.  6. 48. 54.]
119        cord_individul_obj[indivial_i, :] = [ 8.  4. 36. 40.]
120        cord_individul_obj[indivial_i, :] = [ 9.  6. 36. 42.]
121        cord_individul_obj[indivial_i, :] = [10.  6. 28. 34.]
122        cord_individul_obj[indivial_i, :] = [11.  6. 48. 54.]
123        cord_individul_obj[indivial_i, :] = [12.  6. 48. 54.]
124        cord_individul_obj[indivial_i, :] = [13.  6. 36. 42.]
125        cord_individul_obj[indivial_i, :] = [14.  6. 28. 34.]
126        cord_individul_obj[indivial_i, :] = [15.  4. 48. 52.]
127        cord_individul_obj[indivial_i, :] = [16.  5. 64. 69.]
128        cord_individul_obj[indivial_i, :] = [17.  6. 48. 54.]
129        cord_individul_obj[indivial_i, :] = [18.  4. 48. 52.]
130        cord_individul_obj[indivial_i, :] = [19.  6. 52. 58.]
131
132      min(cord_individul_obj[:, 3]) = 13.0
133      historl_G_best_iter[iter, 3] = 13.0
134   Begin iteration:
135
136   iter = 4
137        cord_individul_obj[indivial_i, :] = [ 0.  6. 48. 54.]
138        cord_individul_obj[indivial_i, :] = [ 1.  5. 34. 39.]
139        cord_individul_obj[indivial_i, :] = [ 2.  5. 28. 33.]
140        cord_individul_obj[indivial_i, :] = [ 3.  4. 24. 28.]
141        cord_individul_obj[indivial_i, :] = [ 4.  6. 28. 34.]
142        cord_individul_obj[indivial_i, :] = [ 5.  5. 36. 41.]
143        cord_individul_obj[indivial_i, :] = [ 6.  6. 28. 34.]
144        cord_individul_obj[indivial_i, :] = [ 7.  6. 120. 126.]
145        cord_individul_obj[indivial_i, :] = [ 8.  5. 30. 35.]
146        cord_individul_obj[indivial_i, :] = [ 9.  6. 36. 42.]
147        cord_individul_obj[indivial_i, :] = [10.  6. 28. 34.]
148        cord_individul_obj[indivial_i, :] = [11.  6. 48. 54.]
149        cord_individul_obj[indivial_i, :] = [12.  6. 48. 54.]
150        cord_individul_obj[indivial_i, :] = [13.  6.  8. 14.]
151        cord_individul_obj[indivial_i, :] = [14.  6.  8. 14.]
152        cord_individul_obj[indivial_i, :] = [15.  5. 48. 53.]
153        cord_individul_obj[indivial_i, :] = [16.  5.  8. 13.]
154        cord_individul_obj[indivial_i, :] = [17.  6. 48. 54.]
155        cord_individul_obj[indivial_i, :] = [18.  4. 48. 52.]
156        cord_individul_obj[indivial_i, :] = [19.  4. 52. 56.]
157
158      min(cord_individul_obj[:, 3]) = 13.0
159      historl_G_best_iter[iter, 3] = 13.0
160   Begin iteration:
161
162   iter = 5
163        cord_individul_obj[indivial_i, :] = [ 0.  6. 48. 54.]
```

```
164        cord_individul_obj[indivial_i, :] = [ 1.  5. 34. 39.]
165        cord_individul_obj[indivial_i, :] = [ 2.  4. 28. 32.]
166        cord_individul_obj[indivial_i, :] = [ 3.  5. 36. 41.]
167        cord_individul_obj[indivial_i, :] = [ 4.  6. 40. 46.]
168        cord_individul_obj[indivial_i, :] = [ 5.  5. 36. 41.]
169        cord_individul_obj[indivial_i, :] = [ 6.  6. 28. 34.]
170        cord_individul_obj[indivial_i, :] = [ 7.  5.  8. 13.]
171        cord_individul_obj[indivial_i, :] = [ 8.  5. 48. 53.]
172        cord_individul_obj[indivial_i, :] = [ 9.  6. 36. 42.]
173        cord_individul_obj[indivial_i, :] = [10.  6. 28. 34.]
174        cord_individul_obj[indivial_i, :] = [11.  6. 48. 54.]
175        cord_individul_obj[indivial_i, :] = [12.  6. 72. 78.]
176        cord_individul_obj[indivial_i, :] = [13.  6. 36. 42.]
177        cord_individul_obj[indivial_i, :] = [14.  6. 28. 34.]
178        cord_individul_obj[indivial_i, :] = [15.  5. 48. 53.]
179        cord_individul_obj[indivial_i, :] = [16.  5. 48. 53.]
180        cord_individul_obj[indivial_i, :] = [17.  6. 48. 54.]
181        cord_individul_obj[indivial_i, :] = [18.  4. 48. 52.]
182        cord_individul_obj[indivial_i, :] = [19.  6. 52. 58.]
183
184     min(cord_individul_obj[:, 3]) =  13.0
185     historl_G_best_iter[iter, 3] =  13.0
186  Begin iteration:
187
188  iter =  6
189        cord_individul_obj[indivial_i, :] = [ 0.  6. 48. 54.]
190        cord_individul_obj[indivial_i, :] = [ 1.  5. 34. 39.]
191        cord_individul_obj[indivial_i, :] = [ 2.  4. 28. 32.]
192        cord_individul_obj[indivial_i, :] = [ 3.  5. 36. 41.]
193        cord_individul_obj[indivial_i, :] = [ 4.  6. 40. 46.]
194        cord_individul_obj[indivial_i, :] = [ 5.  5. 36. 41.]
195        cord_individul_obj[indivial_i, :] = [ 6.  6. 48. 54.]
196        cord_individul_obj[indivial_i, :] = [ 7.  6. 58. 64.]
197        cord_individul_obj[indivial_i, :] = [ 8.  4. 66. 70.]
198        cord_individul_obj[indivial_i, :] = [ 9.  6. 48. 54.]
199        cord_individul_obj[indivial_i, :] = [10.  6. 18. 24.]
200        cord_individul_obj[indivial_i, :] = [11.  6. 66. 72.]
201        cord_individul_obj[indivial_i, :] = [12.  5.  8. 13.]
202        cord_individul_obj[indivial_i, :] = [13.  6. 52. 58.]
203        cord_individul_obj[indivial_i, :] = [14.  6. 28. 34.]
204        cord_individul_obj[indivial_i, :] = [15.  5. 58. 63.]
205        cord_individul_obj[indivial_i, :] = [16.  5. 64. 69.]
206        cord_individul_obj[indivial_i, :] = [17.  6. 32. 38.]
207        cord_individul_obj[indivial_i, :] = [18.  5. 48. 53.]
208        cord_individul_obj[indivial_i, :] = [19.  6. 52. 58.]
209
210     min(cord_individul_obj[:, 3]) =  13.0
211     historl_G_best_iter[iter, 3] =  13.0
212  Begin iteration:
213
214  iter =  7
215        cord_individul_obj[indivial_i, :] = [ 0.  6. 48. 54.]
216        cord_individul_obj[indivial_i, :] = [ 1.  5. 34. 39.]
217        cord_individul_obj[indivial_i, :] = [ 2.  4. 12. 16.]
218        cord_individul_obj[indivial_i, :] = [ 3.  5.  8. 13.]
219        cord_individul_obj[indivial_i, :] = [ 4.  6. 28. 34.]
220        cord_individul_obj[indivial_i, :] = [ 5.  5. 36. 41.]
221        cord_individul_obj[indivial_i, :] = [ 6.  6. 28. 34.]
222        cord_individul_obj[indivial_i, :] = [ 7.  6. 56. 62.]
223        cord_individul_obj[indivial_i, :] = [ 8.  5. 40. 45.]
224        cord_individul_obj[indivial_i, :] = [ 9.  6. 36. 42.]
225        cord_individul_obj[indivial_i, :] = [10.  6. 12. 18.]
226        cord_individul_obj[indivial_i, :] = [11.  5.  8. 13.]
227        cord_individul_obj[indivial_i, :] = [12.  6. 64. 70.]
228        cord_individul_obj[indivial_i, :] = [13.  6.  8. 14.]
229        cord_individul_obj[indivial_i, :] = [14.  5.  8. 13.]
230        cord_individul_obj[indivial_i, :] = [15.  4. 48. 52.]
231        cord_individul_obj[indivial_i, :] = [16.  5. 48. 53.]
232        cord_individul_obj[indivial_i, :] = [17.  6. 28. 34.]
233        cord_individul_obj[indivial_i, :] = [18.  5. 44. 49.]
234        cord_individul_obj[indivial_i, :] = [19.  4. 58. 62.]
235
236     min(cord_individul_obj[:, 3]) =  13.0
237     historl_G_best_iter[iter, 3] =  13.0
238  Begin iteration:
239
240  iter =  8
241        cord_individul_obj[indivial_i, :] = [ 0.  6.  8. 14.]
242        cord_individul_obj[indivial_i, :] = [ 1.  5. 84. 89.]
243        cord_individul_obj[indivial_i, :] = [ 2.  4.  8. 12.]
244        cord_individul_obj[indivial_i, :] = [ 3.  4.  8. 12.]
245        cord_individul_obj[indivial_i, :] = [ 4.  6. 12. 18.]
246        cord_individul_obj[indivial_i, :] = [ 5.  5. 24. 29.]
247        cord_individul_obj[indivial_i, :] = [ 6.  6. 12. 18.]
```

```
248        cord_individul_obj[indivial_i, :] = [ 7.  6. 18. 24.]
249        cord_individul_obj[indivial_i, :] = [ 8.  5. 44. 49.]
250        cord_individul_obj[indivial_i, :] = [ 9.  6. 24. 30.]
251        cord_individul_obj[indivial_i, :] = [10.  6. 12. 18.]
252        cord_individul_obj[indivial_i, :] = [11.  6. 18. 24.]
253        cord_individul_obj[indivial_i, :] = [12.  5.  8. 13.]
254        cord_individul_obj[indivial_i, :] = [13.  6. 44. 50.]
255        cord_individul_obj[indivial_i, :] = [14.  5.  8. 13.]
256        cord_individul_obj[indivial_i, :] = [15.  5.  8. 13.]
257        cord_individul_obj[indivial_i, :] = [16.  5. 12. 17.]
258        cord_individul_obj[indivial_i, :] = [17.  6. 12. 18.]
259        cord_individul_obj[indivial_i, :] = [18.  4.  8. 12.]
260        cord_individul_obj[indivial_i, :] = [19.  3. 36. 39.]
261
262     min(cord_individul_obj[:, 3]) =  12.0
263     historl_G_best_iter[iter, 3] =  12.0
264  Begin iteration:
265
266  iter =  9
267        cord_individul_obj[indivial_i, :] = [ 0.  6.  8. 14.]
268        cord_individul_obj[indivial_i, :] = [ 1.  4.  8. 12.]
269        cord_individul_obj[indivial_i, :] = [ 2.  5.  8. 13.]
270        cord_individul_obj[indivial_i, :] = [ 3.  5. 12. 17.]
271        cord_individul_obj[indivial_i, :] = [ 4.  5.  8. 13.]
272        cord_individul_obj[indivial_i, :] = [ 5.  4. 42. 46.]
273        cord_individul_obj[indivial_i, :] = [ 6.  4. 18. 22.]
274        cord_individul_obj[indivial_i, :] = [ 7.  6. 28. 34.]
275        cord_individul_obj[indivial_i, :] = [ 8.  4. 12. 16.]
276        cord_individul_obj[indivial_i, :] = [ 9.  4.  8. 12.]
277        cord_individul_obj[indivial_i, :] = [10.  5.  8. 13.]
278        cord_individul_obj[indivial_i, :] = [11.  6. 12. 18.]
279        cord_individul_obj[indivial_i, :] = [12.  6. 18. 24.]
280        cord_individul_obj[indivial_i, :] = [13.  6. 38. 44.]
281        cord_individul_obj[indivial_i, :] = [14.  5. 16. 21.]
282        cord_individul_obj[indivial_i, :] = [15.  5.  8. 13.]
283        cord_individul_obj[indivial_i, :] = [16.  4.  8. 12.]
284        cord_individul_obj[indivial_i, :] = [17.  5.  8. 13.]
285        cord_individul_obj[indivial_i, :] = [18.  5.  8. 13.]
286        cord_individul_obj[indivial_i, :] = [19.  5. 12. 17.]
287
288     min(cord_individul_obj[:, 3]) =  12.0
289     historl_G_best_iter[iter, 3] =  12.0
290  Begin iteration:
291
292  iter =  10
293        cord_individul_obj[indivial_i, :] = [ 0.  6.  8. 14.]
294        cord_individul_obj[indivial_i, :] = [ 1.  4. 46. 50.]
295        cord_individul_obj[indivial_i, :] = [ 2.  5.  8. 13.]
296        cord_individul_obj[indivial_i, :] = [ 3.  5. 12. 17.]
297        cord_individul_obj[indivial_i, :] = [ 4.  6.  8. 14.]
298        cord_individul_obj[indivial_i, :] = [ 5.  4.  8. 12.]
299        cord_individul_obj[indivial_i, :] = [ 6.  6. 18. 24.]
300        cord_individul_obj[indivial_i, :] = [ 7.  6. 62. 68.]
301        cord_individul_obj[indivial_i, :] = [ 8.  5. 12. 17.]
302        cord_individul_obj[indivial_i, :] = [ 9.  6.  8. 14.]
303        cord_individul_obj[indivial_i, :] = [10.  6.  8. 14.]
304        cord_individul_obj[indivial_i, :] = [ 11.   6. 100. 106.]
305        cord_individul_obj[indivial_i, :] = [12.  6. 36. 42.]
306        cord_individul_obj[indivial_i, :] = [ 13.   6. 132. 138.]
307        cord_individul_obj[indivial_i, :] = [14.  6.  8. 14.]
308        cord_individul_obj[indivial_i, :] = [15.  4.  8. 12.]
309        cord_individul_obj[indivial_i, :] = [16.  4. 18. 22.]
310        cord_individul_obj[indivial_i, :] = [17.  6.  8. 14.]
311        cord_individul_obj[indivial_i, :] = [18.  5.  8. 13.]
312        cord_individul_obj[indivial_i, :] = [19.  6. 46. 52.]
313
314     min(cord_individul_obj[:, 3]) =  12.0
315     historl_G_best_iter[iter, 3] =  12.0
316  Iteration calculate over
317
318
319
320
321  All item are in Bin and:
322     Bin area =  1080
323     Real_area =  108.0
324     Proportion_of_area =  0.1
325        BEST_CHROM =
326           berth: [ 9.5 26.  15.  20.5  1.5  5. ]
327           time:  [0. 0. 0. 0. 0. 0.]
328           num_QC: [2. 2. 3. 2. 2. 3.]
329     Objective function values and some other indicators:
330        Obj0 = 4.00            Obj1 = 8.00            Obj0 + Obj1 = 12.00
331        Total movement of crane: 8.00
```

332   Total waiting time in berth position: 0.00
333   Total index of q during berthing: 449.00
334   Specific arrangement for each vessel:
335   V_id: 0 l_i: 5.0 x_i: 9.5   bow of i: 7.0   tail of i: 12.0 $gama\_i0$: 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
336   V_id: 1 l_i: 6.0 x_i: 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
337   V_id: 2 l_i: 6.0 x_i: 15.0   bow of i: 12.0   tail of i: 18.0 $gama\_i0$: 0.0 $gama\_i1$: 4.0
        $gama\_i1 + 1$: 5.0 $gama\_i1 - gama\_i0$: 4.0 $duration\_time\_i$: 5.0 $demand\_i$: 260.0   work load_i: 260.0   work load gap_i: 0
338   V_id: 3 l_i: 5.0 x_i: 20.5   bow of i: 18.0   tail of i: 23.0 $gama\_i0$: 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
339   V_id: 4 l_i: 3.0 x_i: 1.5   bow of i: 0.0   tail of i: 3.0 $gama\_i0$: 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
340   V_id: 5 l_i: 4.0 x_i: 5.0   bow of i: 3.0   tail of i: 7.0 $gama\_i0$: 0.0 $gama\_i1$: 3.0
        $gama\_i1 + 1$: 4.0 $gama\_i1 - gama\_i0$: 3.0 $duration\_time\_i$: 4.0 $demand\_i$: 220.0 $work\ load\_i$: 220.0   work load gap_i: 0
341
342 Algorithm finished and the total CPU time: 82 s
343 End
344