```
 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=26937
 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 =  13
23        maxlter_num =  20
24        W_inertia =  0.5
25        oder_type_num =  10
26        c1 =  1.5
27        c2 =  2.0
28        r1 =  0.8787579592967039
29        r2 =  0.8787579592967039
30  Begin iteration:
31
32  iter =  0
33        cord_individul_obj[indivial_i, :] = [ 0.  5. 28. 33.]
34        cord_individul_obj[indivial_i, :] = [ 1.  4. 56. 60.]
35        cord_individul_obj[indivial_i, :] = [ 2.  5. 16. 21.]
36        cord_individul_obj[indivial_i, :] = [ 3.  6. 28. 34.]
37        cord_individul_obj[indivial_i, :] = [ 4.  5. 38. 43.]
38        cord_individul_obj[indivial_i, :] = [ 5.  5. 24. 29.]
39        cord_individul_obj[indivial_i, :] = [ 6.  6.  8. 14.]
40        cord_individul_obj[indivial_i, :] = [ 7.  4. 50. 54.]
41        cord_individul_obj[indivial_i, :] = [ 8.  4. 28. 32.]
42        cord_individul_obj[indivial_i, :] = [ 9.  4. 56. 60.]
43
44     min(cord_individul_obj[:, 3]) =  14.0
45     historl_G_best_iter[iter, 3] =  14.0
46  Begin iteration:
47
48  iter =  1
49        cord_individul_obj[indivial_i, :] = [ 0.   3. 162. 165.]
50        cord_individul_obj[indivial_i, :] = [ 1.  6.  8. 14.]
51        cord_individul_obj[indivial_i, :] = [ 2.   3. 134. 137.]
52        cord_individul_obj[indivial_i, :] = [ 3.  6. 44. 50.]
53        cord_individul_obj[indivial_i, :] = [ 4.  6.  8. 14.]
54        cord_individul_obj[indivial_i, :] = [ 5.   4. 116. 120.]
55        cord_individul_obj[indivial_i, :] = [ 6.  5. 12. 17.]
56        cord_individul_obj[indivial_i, :] = [ 7.   4. 142. 146.]
57        cord_individul_obj[indivial_i, :] = [ 8.  4. 50. 54.]
58        cord_individul_obj[indivial_i, :] = [ 9.  4. 32. 36.]
59
60     min(cord_individul_obj[:, 3]) =  14.0
61     historl_G_best_iter[iter, 3] =  14.0
62  Begin iteration:
63
64  iter =  2
65        cord_individul_obj[indivial_i, :] = [ 0.  6.  8. 14.]
66        cord_individul_obj[indivial_i, :] = [ 1.  6. 12. 18.]
67        cord_individul_obj[indivial_i, :] = [ 2.  4. 12. 16.]
68        cord_individul_obj[indivial_i, :] = [ 3.  6. 44. 50.]
69        cord_individul_obj[indivial_i, :] = [ 4.  3. 32. 35.]
70        cord_individul_obj[indivial_i, :] = [ 5.  6. 12. 18.]
71        cord_individul_obj[indivial_i, :] = [ 6.  4. 32. 36.]
72        cord_individul_obj[indivial_i, :] = [ 7.   4. 122. 126.]
73        cord_individul_obj[indivial_i, :] = [ 8.  3. 50. 53.]
74        cord_individul_obj[indivial_i, :] = [ 9.  4. 12. 16.]
75
76     min(cord_individul_obj[:, 3]) =  14.0
77     historl_G_best_iter[iter, 3] =  14.0
78  Begin iteration:
79
```

```
 80   iter =  3
 81       cord_individul_obj[indivial_i, :] = [ 0.  6.  8. 14.]
 82       cord_individul_obj[indivial_i, :] = [ 1.  6. 12. 18.]
 83       cord_individul_obj[indivial_i, :] = [ 2.  6. 44. 50.]
 84       cord_individul_obj[indivial_i, :] = [ 3.  6. 12. 18.]
 85       cord_individul_obj[indivial_i, :] = [ 4.  3. 40. 43.]
 86       cord_individul_obj[indivial_i, :] = [ 5.  6. 12. 18.]
 87       cord_individul_obj[indivial_i, :] = [ 6.  5. 26. 31.]
 88       cord_individul_obj[indivial_i, :] = [ 7.  6.  8. 14.]
 89       cord_individul_obj[indivial_i, :] = [ 8.  6. 44. 50.]
 90       cord_individul_obj[indivial_i, :] = [ 9.  4. 20. 24.]
 91
 92     min(cord_individul_obj[:, 3]) =  14.0
 93     historl_G_best_iter[iter, 3] =  14.0
 94   Begin iteration:
 95
 96   iter =  4
 97       cord_individul_obj[indivial_i, :] = [ 0.  6.  8. 14.]
 98       cord_individul_obj[indivial_i, :] = [ 1.  6.  8. 14.]
 99       cord_individul_obj[indivial_i, :] = [ 2.  6.  8. 14.]
100       cord_individul_obj[indivial_i, :] = [ 3.  6.  8. 14.]
101       cord_individul_obj[indivial_i, :] = [ 4.   4. 114. 118.]
102       cord_individul_obj[indivial_i, :] = [ 5.  6. 32. 38.]
103       cord_individul_obj[indivial_i, :] = [ 6.  5. 82. 87.]
104       cord_individul_obj[indivial_i, :] = [ 7.  3. 96. 99.]
105       cord_individul_obj[indivial_i, :] = [ 8.  6. 14. 20.]
106       cord_individul_obj[indivial_i, :] = [ 9.   3. 190. 193.]
107
108     min(cord_individul_obj[:, 3]) =  14.0
109     historl_G_best_iter[iter, 3] =  14.0
110   Begin iteration:
111
112   iter =  5
113       cord_individul_obj[indivial_i, :] = [ 0.  6. 12. 18.]
114       cord_individul_obj[indivial_i, :] = [ 1.  5. 28. 33.]
115       cord_individul_obj[indivial_i, :] = [ 2.  6.  8. 14.]
116       cord_individul_obj[indivial_i, :] = [ 3.  6. 12. 18.]
117       cord_individul_obj[indivial_i, :] = [ 4.  4. 12. 16.]
118       cord_individul_obj[indivial_i, :] = [ 5.  6. 12. 18.]
119       cord_individul_obj[indivial_i, :] = [ 6.  5. 44. 49.]
120       cord_individul_obj[indivial_i, :] = [ 7.  3. 68. 71.]
121       cord_individul_obj[indivial_i, :] = [ 8.  6. 32. 38.]
122       cord_individul_obj[indivial_i, :] = [ 9.  6.  8. 14.]
123
124     min(cord_individul_obj[:, 3]) =  14.0
125     historl_G_best_iter[iter, 3] =  14.0
126   Begin iteration:
127
128   iter =  6
129       cord_individul_obj[indivial_i, :] = [ 0.  6.  8. 14.]
130       cord_individul_obj[indivial_i, :] = [ 1.  5. 18. 23.]
131       cord_individul_obj[indivial_i, :] = [ 2.  6.  8. 14.]
132       cord_individul_obj[indivial_i, :] = [ 3.  6.  8. 14.]
133       cord_individul_obj[indivial_i, :] = [ 4.  3. 38. 41.]
134       cord_individul_obj[indivial_i, :] = [ 5.  6. 16. 22.]
135       cord_individul_obj[indivial_i, :] = [ 6.  6.  8. 14.]
136       cord_individul_obj[indivial_i, :] = [ 7.  6.  8. 14.]
137       cord_individul_obj[indivial_i, :] = [ 8.  6.  8. 14.]
138       cord_individul_obj[indivial_i, :] = [ 9.  6.  8. 14.]
139
140     min(cord_individul_obj[:, 3]) =  14.0
141     historl_G_best_iter[iter, 3] =  14.0
142   Begin iteration:
143
144   iter =  7
145       cord_individul_obj[indivial_i, :] = [ 0.  6.  8. 14.]
146       cord_individul_obj[indivial_i, :] = [ 1.  6.  8. 14.]
147       cord_individul_obj[indivial_i, :] = [ 2.  6.  8. 14.]
148       cord_individul_obj[indivial_i, :] = [ 3.  6.  8. 14.]
149       cord_individul_obj[indivial_i, :] = [ 4.  6.  8. 14.]
150       cord_individul_obj[indivial_i, :] = [ 5.  6.  8. 14.]
151       cord_individul_obj[indivial_i, :] = [ 6.  5. 56. 61.]
152       cord_individul_obj[indivial_i, :] = [ 7.   4.  96. 100.]
153       cord_individul_obj[indivial_i, :] = [ 8.  6.  8. 14.]
154       cord_individul_obj[indivial_i, :] = [ 9.  6.  8. 14.]
155
156     min(cord_individul_obj[:, 3]) =  14.0
157     historl_G_best_iter[iter, 3] =  14.0
158   Begin iteration:
159
160   iter =  8
161       cord_individul_obj[indivial_i, :] = [ 0.  6. 12. 18.]
162       cord_individul_obj[indivial_i, :] = [ 1.  4. 20. 24.]
163       cord_individul_obj[indivial_i, :] = [ 2.  6. 32. 38.]
```

```
164        cord_individul_obj[indivial_i, :] = [ 3.  6. 12. 18.]
165        cord_individul_obj[indivial_i, :] = [ 4.  6. 54. 60.]
166        cord_individul_obj[indivial_i, :] = [ 5.  6. 12. 18.]
167        cord_individul_obj[indivial_i, :] = [ 6.  3. 12. 15.]
168        cord_individul_obj[indivial_i, :] = [ 7.  6.  8. 14.]
169        cord_individul_obj[indivial_i, :] = [ 8.  6. 44. 50.]
170        cord_individul_obj[indivial_i, :] = [ 9.  6. 12. 18.]
171
172      min(cord_individul_obj[:, 3]) =  14.0
173      historl_G_best_iter[iter, 3] =  14.0
174  Begin iteration:
175
176  iter =  9
177        cord_individul_obj[indivial_i, :] = [ 0.  6. 12. 18.]
178        cord_individul_obj[indivial_i, :] = [ 1.  6. 34. 40.]
179        cord_individul_obj[indivial_i, :] = [ 2.  6. 22. 28.]
180        cord_individul_obj[indivial_i, :] = [ 3.  6. 12. 18.]
181        cord_individul_obj[indivial_i, :] = [ 4.  6.  8. 14.]
182        cord_individul_obj[indivial_i, :] = [ 5.  6. 12. 18.]
183        cord_individul_obj[indivial_i, :] = [ 6.  6.  8. 14.]
184        cord_individul_obj[indivial_i, :] = [ 7.  6. 52. 58.]
185        cord_individul_obj[indivial_i, :] = [ 8.  6.  8. 14.]
186        cord_individul_obj[indivial_i, :] = [ 9.  6.  8. 14.]
187
188      min(cord_individul_obj[:, 3]) =  14.0
189      historl_G_best_iter[iter, 3] =  14.0
190  Begin iteration:
191
192  iter =  10
193        cord_individul_obj[indivial_i, :] = [ 0.  6. 24. 30.]
194        cord_individul_obj[indivial_i, :] = [ 1.  5. 106. 111.]
195        cord_individul_obj[indivial_i, :] = [ 2.  6. 48. 54.]
196        cord_individul_obj[indivial_i, :] = [ 3.  6.  8. 14.]
197        cord_individul_obj[indivial_i, :] = [ 4.  6. 12. 18.]
198        cord_individul_obj[indivial_i, :] = [ 5.  6.  8. 14.]
199        cord_individul_obj[indivial_i, :] = [ 6.  4. 64. 68.]
200        cord_individul_obj[indivial_i, :] = [ 7.  6.  8. 14.]
201        cord_individul_obj[indivial_i, :] = [ 8.  6. 84. 90.]
202        cord_individul_obj[indivial_i, :] = [ 9.  6. 40. 46.]
203
204      min(cord_individul_obj[:, 3]) =  14.0
205      historl_G_best_iter[iter, 3] =  14.0
206  Begin iteration:
207
208  iter =  11
209        cord_individul_obj[indivial_i, :] = [ 0.  6. 12. 18.]
210        cord_individul_obj[indivial_i, :] = [ 1.  6.  8. 14.]
211        cord_individul_obj[indivial_i, :] = [ 2.  6. 12. 18.]
212        cord_individul_obj[indivial_i, :] = [ 3.  6. 12. 18.]
213        cord_individul_obj[indivial_i, :] = [ 4.  5. 12. 17.]
214        cord_individul_obj[indivial_i, :] = [ 5.  6. 12. 18.]
215        cord_individul_obj[indivial_i, :] = [ 6.  6. 12. 18.]
216        cord_individul_obj[indivial_i, :] = [ 7.  5. 60. 65.]
217        cord_individul_obj[indivial_i, :] = [ 8.  6. 12. 18.]
218        cord_individul_obj[indivial_i, :] = [ 9.  6. 12. 18.]
219
220      min(cord_individul_obj[:, 3]) =  14.0
221      historl_G_best_iter[iter, 3] =  14.0
222  Begin iteration:
223
224  iter =  12
225        cord_individul_obj[indivial_i, :] = [ 0.  6.  8. 14.]
226        cord_individul_obj[indivial_i, :] = [ 1.  5. 44. 49.]
227        cord_individul_obj[indivial_i, :] = [ 2.  6.  8. 14.]
228        cord_individul_obj[indivial_i, :] = [ 3.  6.  8. 14.]
229        cord_individul_obj[indivial_i, :] = [ 4.  5. 40. 45.]
230        cord_individul_obj[indivial_i, :] = [ 5.  6.  8. 14.]
231        cord_individul_obj[indivial_i, :] = [ 6.  4. 18. 22.]
232        cord_individul_obj[indivial_i, :] = [ 7.  6.  8. 14.]
233        cord_individul_obj[indivial_i, :] = [ 8.  6.  8. 14.]
234        cord_individul_obj[indivial_i, :] = [ 9.  6.  8. 14.]
235
236      min(cord_individul_obj[:, 3]) =  14.0
237      historl_G_best_iter[iter, 3] =  14.0
238  Begin iteration:
239
240  iter =  13
241        cord_individul_obj[indivial_i, :] = [ 0.  6. 20. 26.]
242        cord_individul_obj[indivial_i, :] = [ 1.  6.  8. 14.]
243        cord_individul_obj[indivial_i, :] = [ 2.  6. 12. 18.]
244        cord_individul_obj[indivial_i, :] = [ 3.  6. 32. 38.]
245        cord_individul_obj[indivial_i, :] = [ 4.  6. 32. 38.]
246        cord_individul_obj[indivial_i, :] = [ 5.  6. 48. 54.]
247        cord_individul_obj[indivial_i, :] = [ 6.  3. 20. 23.]
```

```
248        cord_individul_obj[indivial_i, :] = [ 7.  5. 40. 45.]
249        cord_individul_obj[indivial_i, :] = [ 8.  6. 44. 50.]
250        cord_individul_obj[indivial_i, :] = [ 9.  6. 20. 26.]
251
252    min(cord_individul_obj[:, 3]) =  14.0
253    historl_G_best_iter[iter, 3] =  14.0
254  Begin iteration:
255
256  iter =  14
257        cord_individul_obj[indivial_i, :] = [ 0.  6. 12. 18.]
258        cord_individul_obj[indivial_i, :] = [ 1.  6. 84. 90.]
259        cord_individul_obj[indivial_i, :] = [ 2.  6. 12. 18.]
260        cord_individul_obj[indivial_i, :] = [ 3.  6.  8. 14.]
261        cord_individul_obj[indivial_i, :] = [ 4.  5. 12. 17.]
262        cord_individul_obj[indivial_i, :] = [ 5.  6.  8. 14.]
263        cord_individul_obj[indivial_i, :] = [ 6.  6.  8. 14.]
264        cord_individul_obj[indivial_i, :] = [ 7.  5. 22. 27.]
265        cord_individul_obj[indivial_i, :] = [ 8.  6.  8. 14.]
266        cord_individul_obj[indivial_i, :] = [ 9.  6.  8. 14.]
267
268    min(cord_individul_obj[:, 3]) =  14.0
269    historl_G_best_iter[iter, 3] =  14.0
270  Begin iteration:
271
272  iter =  15
273        cord_individul_obj[indivial_i, :] = [ 0.  6. 12. 18.]
274        cord_individul_obj[indivial_i, :] = [ 1.  6.  8. 14.]
275        cord_individul_obj[indivial_i, :] = [ 2.  6. 48. 54.]
276        cord_individul_obj[indivial_i, :] = [ 3.  6. 18. 24.]
277        cord_individul_obj[indivial_i, :] = [ 4.  5. 18. 23.]
278        cord_individul_obj[indivial_i, :] = [ 5.  6. 12. 18.]
279        cord_individul_obj[indivial_i, :] = [ 6.  4. 12. 16.]
280        cord_individul_obj[indivial_i, :] = [ 7.  5. 28. 33.]
281        cord_individul_obj[indivial_i, :] = [ 8.  6. 48. 54.]
282        cord_individul_obj[indivial_i, :] = [ 9.  6. 12. 18.]
283
284    min(cord_individul_obj[:, 3]) =  14.0
285    historl_G_best_iter[iter, 3] =  14.0
286  Begin iteration:
287
288  iter =  16
289        cord_individul_obj[indivial_i, :] = [ 0.  6.  8. 14.]
290        cord_individul_obj[indivial_i, :] = [ 1.  5. 28. 33.]
291        cord_individul_obj[indivial_i, :] = [ 2.  6.  8. 14.]
292        cord_individul_obj[indivial_i, :] = [ 3.  6.  8. 14.]
293        cord_individul_obj[indivial_i, :] = [ 4.  5. 16. 21.]
294        cord_individul_obj[indivial_i, :] = [ 5.  6. 12. 18.]
295        cord_individul_obj[indivial_i, :] = [ 6.  6. 12. 18.]
296        cord_individul_obj[indivial_i, :] = [ 7.  6.  8. 14.]
297        cord_individul_obj[indivial_i, :] = [ 8.  6. 32. 38.]
298        cord_individul_obj[indivial_i, :] = [ 9.  6. 16. 22.]
299
300    min(cord_individul_obj[:, 3]) =  14.0
301    historl_G_best_iter[iter, 3] =  14.0
302  Begin iteration:
303
304  iter =  17
305        cord_individul_obj[indivial_i, :] = [ 0.  6.  8. 14.]
306        cord_individul_obj[indivial_i, :] = [ 1.  5. 28. 33.]
307        cord_individul_obj[indivial_i, :] = [ 2.  6. 48. 54.]
308        cord_individul_obj[indivial_i, :] = [ 3.  6.  8. 14.]
309        cord_individul_obj[indivial_i, :] = [ 4.  5. 58. 63.]
310        cord_individul_obj[indivial_i, :] = [ 5.  6. 12. 18.]
311        cord_individul_obj[indivial_i, :] = [ 6.  3. 26. 29.]
312        cord_individul_obj[indivial_i, :] = [ 7.  5. 28. 33.]
313        cord_individul_obj[indivial_i, :] = [ 8.  6.  8. 14.]
314        cord_individul_obj[indivial_i, :] = [ 9.  6.  8. 14.]
315
316    min(cord_individul_obj[:, 3]) =  14.0
317    historl_G_best_iter[iter, 3] =  14.0
318  Begin iteration:
319
320  iter =  18
321        cord_individul_obj[indivial_i, :] = [ 0.  6. 12. 18.]
322        cord_individul_obj[indivial_i, :] = [ 1.  4. 78. 82.]
323        cord_individul_obj[indivial_i, :] = [ 2.  6. 12. 18.]
324        cord_individul_obj[indivial_i, :] = [ 3.  6. 12. 18.]
325        cord_individul_obj[indivial_i, :] = [ 4.  6.  8. 14.]
326        cord_individul_obj[indivial_i, :] = [ 5.  6. 38. 44.]
327        cord_individul_obj[indivial_i, :] = [ 6.  5. 12. 17.]
328        cord_individul_obj[indivial_i, :] = [ 7.  4. 42. 46.]
329        cord_individul_obj[indivial_i, :] = [ 8.  6. 44. 50.]
330        cord_individul_obj[indivial_i, :] = [ 9.  6. 12. 18.]
331
```

```
332     min(cord_individul_obj[:, 3]) =  14.0
333     historl_G_best_iter[iter, 3] =  14.0
334  Begin iteration:
335
336  iter =  19
337         cord_individul_obj[indivial_i, :] = [ 0.  6. 12. 18.]
338         cord_individul_obj[indivial_i, :] = [ 1.  6.  8. 14.]
339         cord_individul_obj[indivial_i, :] = [ 2.  6. 24. 30.]
340         cord_individul_obj[indivial_i, :] = [ 3.  6.  8. 14.]
341         cord_individul_obj[indivial_i, :] = [ 4.  4. 12. 16.]
342         cord_individul_obj[indivial_i, :] = [ 5.  6. 20. 26.]
343         cord_individul_obj[indivial_i, :] = [ 6.  5. 12. 17.]
344         cord_individul_obj[indivial_i, :] = [ 7.  4. 30. 34.]
345         cord_individul_obj[indivial_i, :] = [ 8.  6.  8. 14.]
346         cord_individul_obj[indivial_i, :] = [ 9.  6. 14. 20.]
347
348     min(cord_individul_obj[:, 3]) =  14.0
349     historl_G_best_iter[iter, 3] =  14.0
350  Begin iteration:
351
352  iter =  20
353         cord_individul_obj[indivial_i, :] = [ 0.  6.  8. 14.]
354         cord_individul_obj[indivial_i, :] = [ 1.  4. 12. 16.]
355         cord_individul_obj[indivial_i, :] = [ 2.  6.  8. 14.]
356         cord_individul_obj[indivial_i, :] = [ 3.  6. 12. 18.]
357         cord_individul_obj[indivial_i, :] = [ 4.  6. 20. 26.]
358         cord_individul_obj[indivial_i, :] = [ 5.  6. 12. 18.]
359         cord_individul_obj[indivial_i, :] = [ 6.   3. 116. 119.]
360         cord_individul_obj[indivial_i, :] = [ 7.  6.  8. 14.]
361         cord_individul_obj[indivial_i, :] = [ 8.  6. 16. 22.]
362         cord_individul_obj[indivial_i, :] = [ 9.  6.  8. 14.]
363
364     min(cord_individul_obj[:, 3]) =  14.0
365     historl_G_best_iter[iter, 3] =  14.0
366  Iteration calculate over
367
368
369
370
371  All item are in Bin and:
372     Bin area =  1080
373     Real_area =  105.0
374     Proportion_of_area =  0.09722222222222222
375       BEST_CHROM =
376         berth: [ 5.5 11.  26.  20.5  1.5 16. ]
377         time:  [0. 0. 0. 0. 0. 0.]
378         num_QC:  [2. 4. 2. 2. 2. 3.]
379     Objective function values and some other indicators:
380       Obj0 = 6.00          Obj1 = 8.00          Obj0 + Obj1 = 14.00
381       Total movement of crane: 8.00
382       Total waiting time in berth position: 0.00
383       Total index of q during berthing: 592.00
384     Specific arrangement for each vessel:
```

385	V_id: 0	li: 5.0	xi: 5.5	bow of i: 3.0	tail of i: 8.0	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						
386	V_id: 1	li: 6.0	xi: 11.0	bow of i: 8.0	tail of i: 14.0	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: 120.0	
	work load gap_i: 0						
387	V_id: 2	li: 6.0	xi: 26.0	bow of i: 23.0	tail of i: 29.0	gama_i0: 0.0	gama_i1: 6.0
		gama_i1 + 1: 7.0	gama_i1 - gama_i0: 6.0	duration_time_i: 7.0	demand_i: 260.0	work load_i: 260.0	
	work load gap_i: 0						
388	V_id: 3	li: 5.0	xi: 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						
389	V_id: 4	li: 3.0	xi: 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						
390	V_id: 5	li: 4.0	xi: 16.0	bow of i: 14.0	tail of i: 18.0	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						

```
391
392  Algorithm finished and the total CPU time: 67 s
393  End
394
```