



```
80     second level: [0. 2.]
81     third level: [4. 7.] ]
82     The No. 5 iteration is finished!
83
84     Beging the No. 6 iteration:
85     obj[gen-1] = 4.79     temp_best_value_gen = 4.79
86     No, maintain solution and obj[gen] = 4.79 , and the tolerance_counter = 5
87     solution chromosome =
88     first level: [ [2.01 4.03]
89     second level: [0. 2.]
90     third level: [4. 7.] ]
91     The No. 6 iteration is finished!
92
93
94     -----
95     The iteration is terminated and then visulize the solution:
96     solution chromosome =
97     first level: [ [2.01 4.03]
98     second level: [0. 2.]
99     third level: [4. 7.] ]
100    Objective function values and some other indicators:
101    Obj0 = 2.00           Obj1 = 3.58           Obj0 + Obj1 = 5.58
102    Total movement of crane: 1.58
103    Total waiting time in berth position: 2.00
104    Total index of q during berthing: 27.00
105    Specific arrangement for each vessel:
106    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
107    duration_time_i: 2.0              demand_i: 160.0              work load_i: 160.0              work load gap_i: 0
108    V_id: 1              li: 8.0              xi: 4.0              bow of i: 0.0              tail of i: 8.0              gama_i0: 2.0              gama_i1: 3.0
109    duration_time_i: 1.0              demand_i: 120.0              work load_i: 120.0              work load gap_i: 0
110
111    Algorithm finished and the total CPU time: 185 s
112    End
113
```