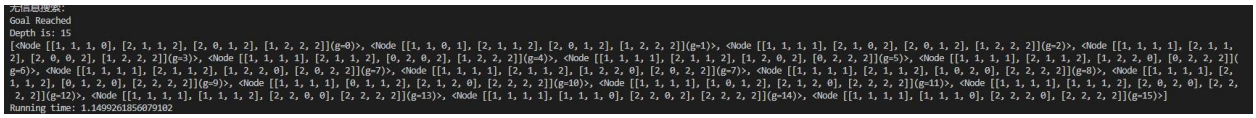
Programming Report

1. Search without information method

The search without information is achieved with binary Breadth-First Search method. When the two ends of the binary search converge, the search is terminated and the two paths will be combined as the final solution.

Results are as follows:

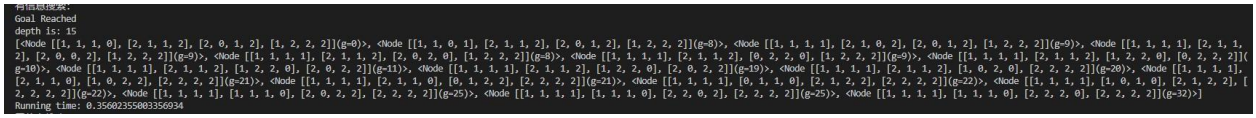


15 moves, runtime 1.15 s

2. Search with information method

The search without information is achieved with binary a star method, using both the number of bicycles not in goal state coordinate and the number of moves as the cost. When the two ends of the binary search converge, the search is terminated and the two paths will be combined as the final solution.

Results are as follows:



15 moves, runtime 0.36 s

3. Examine and compare the two methods

Both methods adopted the binary search method to compress the search time, thus the performance of the two methods can be compared fairly. Both search methods give the complete solution for the best route and least number of moves, but the search with information method can complete the search in a shorter time, thus the a star method has a better performance over the Breadth-First Search