HW1 Wet in 046203 Planning and Reinforcement Learning  
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Solving 8-Puzzle with Dijkstra’s Algorithm

1. We have 9 numbers that can be placed in each of the 9 possible locations on the grid. Therefore, the number of possible states is . In fact, the number of reachable states is half of that number and equals . This number is too big to run minimization of all the states in each iteration. Instead, we will not save all the states but only the nodes we reach to and its neighbors (that are not already in the graph)
2. CODE

Solving 8-Puzzle with A\* Algorithm

1. גשג
2. CODE
3. The heuristic function matters
4. The following eight-puzzle instance take 27 moves to solve:

Dijkstra algorithm took: 25.78 seconds to complete and it visited 176184 states  
 A\* algorithm took 0.37 seconds and it visited 2194 states

1. Heuristic function analysis