Homework/Pop Quiz #2 of the course: Theory of Computer Games.

1. Illustrate the A\* tree search by finding the shortest pathfinding (#nodes = 10) for the following 8-puzzles. (Hint: use Manhattan distance.)

|  |  |  |
| --- | --- | --- |
| 2 | 3 | 4 |
| 8 |  | 5 |
| 1 | 7 | 6 |

(Source)

|  |  |  |
| --- | --- | --- |
| 1 | 2 | 3 |
| 8 |  | 4 |
| 7 | 6 | 5 |

(Target)

1. If you have only memory space with M, how do you design an efficient bi-directional search?
2. If you want to use additive pattern databases for 1-7 and 8-15, how do you design the pattern databases and what sizes do you need?

