

Project: It's a group project. The maximum number of members for each group will be 2.

Name: Implementation of A* algorithm to solve the 8 Puzzle Problem.

Problem Description:

This problem will focus on solving the 8 Puzzle problem. You will be given an initial board configuration and a desired final configuration. You need to implement the A* algorithm to calculate how using the minimum number of valid moves, goal state or configuration can be reached from the initial state/configuration.

You also need to print the steps for each board configuration how from the initial state, the goal state is reached. Please look at the following input and output section for more explanation.

Input configurations are of each 3 x 3 size. Here 'X' means, this is the empty tile.

Test Cases:

Input	Output
Initial: X 7 2 1 6 3 4 5 8 Goal: X 1 2 3 4 5 6 7 8	step #1 X 7 2 1 6 3 4 5 8 step #2 1 7 2 X 6 3 4 5 8 step #3 1 7 2 4 6 3 X 5 8 step #4 1 7 2 4 6 3 5 X 8 step #5 1 7 2 4 X 3 5 6 8 step #6 1 X 2 4 7 3 5 6 8 step #7 X 1 2 4 7 3 5 6 8 step #8 4 1 2 X 7 3 5 6 8 step #9 4 1 2 5 7 3 X 6 8 step #10

	4 1 2 5 7 3 6 X 8 step #11 4 1 2 5 X 3 6 7 8 step #12 4 1 2 5 3 X 6 7 8 step #13 4 1 X 5 3 2 6 7 8 step #14 4 X 1 5 3 2 6 7 8 step #15 4 3 1 5 X 2 6 7 8 step #16 4 3 1 X 5 2 6 7 8 step #17 X 3 1 4 5 2 6 7 8 step #18 3 X 1 4 5 2 6 7 8 step #19 3 1 X 4 5 2 6 7 8 step #20 3 1 2 4 5 X 6 7 8 step #21 3 1 2 4 X 5 6 7 8 step #22 3 1 2 X 4 5 6 7 8 step #23 X 1 2 3 4 5 6 7 8
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