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HEURISTIC FOR 8 PUZZLE WITH 3 BLANKS

I used Manhattan Distance + Linear Conflicts as heuristic for 8 puzzle with 3 blanks. The explanation of the Manhattan Distance is clear and can be found in the course textbook. Linear Conflict is an addition to the Manhattan Distance heuristic. Consider the case:

2	1	0
0	3	4
5	0	6

Focus about 1 and 2. Since direct swap is not possible in the n puzzle problem, for 1 and 2 to reach their goal position; 1 or 2 should go up and down (adding extra to its Manhattan Distance). Thus, in this heuristic; we use an improved version of Manhattan Distance. Besides calculating the Manhattan Distance, we also add 2 for each linear conflict as stated in the example. So, the formula of the heuristic as follows:

H2(n) = H1(n) + 2 * Number of Linear Conflicts, where H1(n) is the classical Manhattan Distance heuristic.