9/10/24 Lab-3

- Solve the 8 puzzle using
  > Depth First search
  > manhatlan distance

Using DFS

- Intialize:

(1) Initialize the start and goal state define the initialize puzzle config and goal config.

(2) Find the empty / blank tile

Blank tile in	no: of moves
middle	4
edge	3
corner	2

(3) Check if current state is the goal state.
→ if yes the puzzle is solved

(4) Explore the all possible moves

(5) Recursively explore the states.
DFS: Explores each branch before backtracking
Manhattan: heuristic calculates

(6) Backtrac
is found

(7) End u
or all.

5
• the sum of
the current
final posit

Manhatta

8	6	3
1		5
2	4	7

↓

8	6	3
1	5	
2	4	7

↓

Check using pure DFS so on

(6) Backtrack if cant. only if no solution is found.

(7) End when goal state is reached or all possibilities are found.

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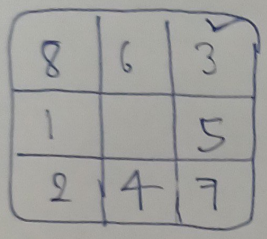
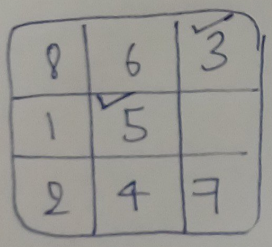
* the sum of absolute differences between the current position of tile verus the final position of tile.

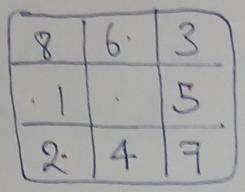
Manhattan

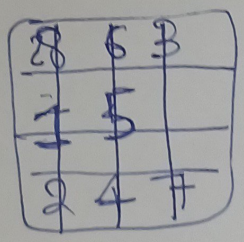




Check using Manhattan so on

DFS





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