Lab #01: N-Queens Problem

Place N queens on an N×N chessboard such that no two queens threaten each other (i.e., no two queens share the same row, column, or diagonal).

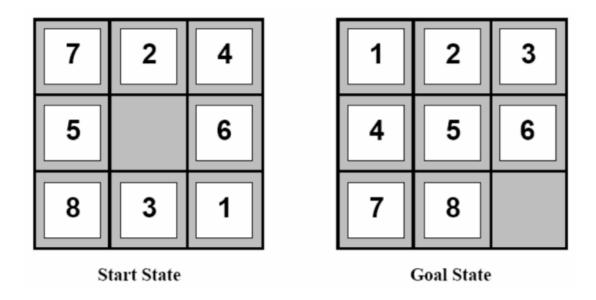
Lab #02: 8- puzzle Problem

Solve the eight puzzle problem where,

- **Initial state:** Any configuration
- Goal State: Tiles in ascending (specific) order

The solution will be a sequence of moves of the blank that transforms the initial state to the goal state.

Example: 8-puzzle



Lab #03: Water jug problem

You are given two jugs:

- Jug 1: Capacity of **X** liters $(0 \le X \le 9)$
- Jug 2: Capacity of **Y** liters $(0 \le Y \le 9)$

Task: Measure exactly **Z** liters of water using these two jugs.

Allowed Operations:

- 1. Fill one of the jugs.
- 2. Empty one of the jugs.
- 3. Pour water from one jug into another until one jug is either full or empty.

Solve for: X = 3, Y = 4, Z = 2

Lab #04:

Implement the Breadth-First Search (BFS) algorithm and submit the code.

Lab #05:

Implement the **Depth-First Search (DFS)** algorithm and submit the code.

Lab #06:

Solve the **Missionaries and Cannibals Problem** and submit the code. Show the steps as follows:

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Missionneries and Cannibals problem
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             BOAT-L[C, ]---- M M M
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Lab #07:Make a **Sudoku Solver** and submit the code.

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