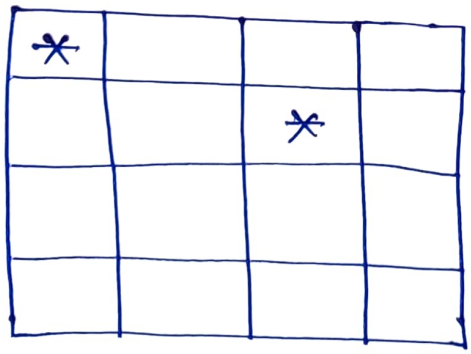
Q. Explain N-queens problem in detail.

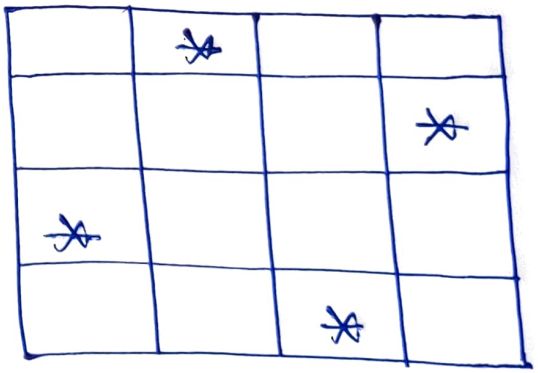
Ans: The N-queens problem is a classical puzzle where you aim to place N queens on an N×N chessboard without any queen being able to attack another. This problem is basically solved using back tracking.

4 queens problem

We have to place 4 queens on a 4×4 board. This is solved using back tracking as:



Not able to place 3rd queen.



This is one solution.

8 queens problem

The 8 queens problem is a bit more complex, requiring you to place 8 queens

on an 8x8 board. This problem has 92 distinct solutions. The most common method to solve it is using backtracking algorithm where you try different combinations of queen placement and backtrack when conflicts arise until you find a valid solution.