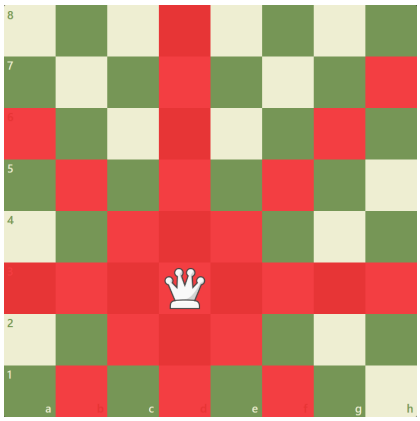
The n-Queens Problem

The n-Queens problem is a constraint programming (CP) (similar to the n-Towers problem discussed during the lectures) by a combinatorial problem based on the game of chess. In chess, a **queen** can attack horizontally, vertically, and **diagonally**. The n-Queens problem asks: *How can **N queens** be placed on an **NxN** chessboard so that **no two of them attack each other**?*



Use OR-Tools to write a program that provides the number of possible solutions and that prints out one of them.

Constraints:

1. There must be one queen in each column;
2. There must be one queen in each row;
3. N must be equal for number of towers, rows and columns;
4. **There must be one queen in each diagonal.**