Eight queens puzzle

The eight queens puzzle is the problem of placing eight chess queens on an 8×8 chessboard so that no two queens threaten each other; thus, a solution requires that no two queens share the same row, column, or diagonal. There are 92 solutions. The problem was first posed in the mid-19th century. In the modern era, it is often used as an example problem for various computer programming techniques.

The eight-queens puzzle is a special case of the more general ***n* queens problem** of placing n non-attacking queens on an n×n chessboard. Solutions exist for all natural numbers n except for n = 2 and n = 3. Although the exact number of solutions is only known for $n \leq 27$, the asymptotic growth rate of the number of solutions is approximately $(0.143\ n)^n$.

Source: Wikipedia – Eight Queens Puzzle

Problem

You are tasked with solving the classic 8 queens puzzle using a chessboard of size $n \times n$. The objective of this puzzle is to place n queens on the chessboard such that no two queens threaten each other. A queen can attack any piece that is in the same row, column, or diagonal.

Your task is to implement a function that finds and prints all practical solutions to the n-queens puzzle. Each solution should be represented as a unique configuration of queens on the chessboard.

Function Description

Complete the function `‘find_queen_placements’` in the editor below.

`‘find_queen_placements’` has the following parameter:

`‘int size’`: the size of the chessboard (also the number of queens to place).

The function should print each solution in the following format:

For each solution, print the board configuration with 'Q' representing a queen and '.' representing an empty space.

Each solution should be followed by a blank line for readability.

Constraints

- $1 \leq size \leq 12$

Input Format

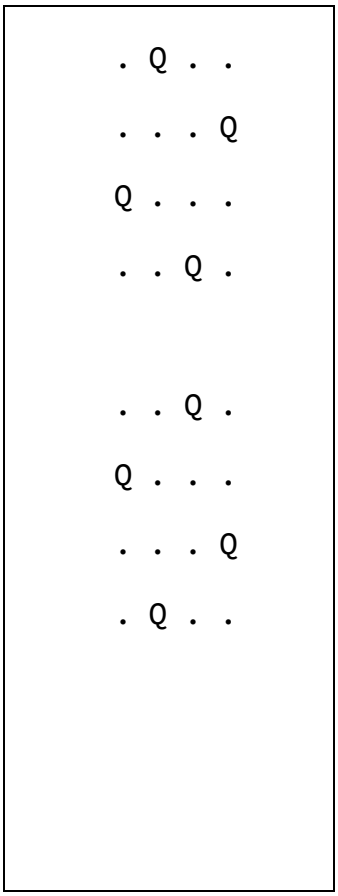
The function does not take any input from the user. Instead, the `‘size’` parameter will be provided directly.

Output Format

Print all the practical solutions for the n-queens puzzle.

Example

For `‘size = 4’`, one output could be:



Each solution is separated by a blank line.