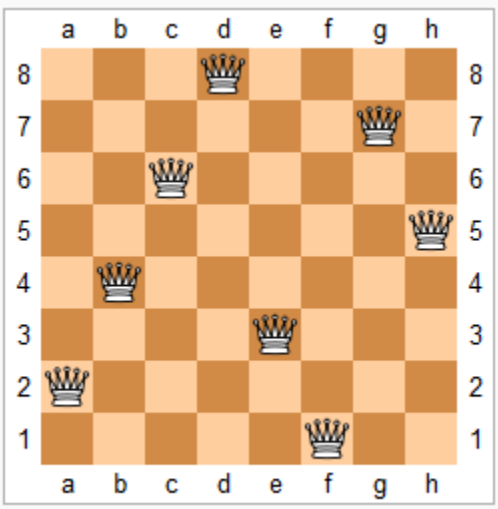
GA TASK 1: N-QUEENS

In chess, a queen can move as far as she pleases, horizontally, vertically, or diagonally. A chess board has 8 rows and 8 columns. The standard 8 by 8 Queen's problem asks how to place 8 queens on an ordinary chess board so that none of them can hit any other in one move.



One solution to the eight queens puzzle

An obvious modification of the 8 by 8 problem is to consider an N by N "chess board" and ask if one can place N queens on such a board.

Given an integer *n*, return *a solution* to the *n*-queens puzzle.

Each solution contains a distinct board configuration of the *n*-queens' placement,

where 'Q' and '.' both indicate a queen and an empty space respectively.

For example,

There exist two distinct solutions to the 4-queens puzzle:

```
Solution 1
.Q..
...Q
Q...
..Q.

Solution 2
..Q.
Q...
...Q
.Q..
```

GA TASK 2: Token Game

The game board is an $h \times w$ rectangle, where there are h rows of squares from front (first row) to back (last row) and w columns of squares from left to right. Each square has a token whose value can be from 1 to 100. You want to collect as much total value of tokens as possible, subject to the following game rules:

- You start by choosing any token in the first row.
- Then, you move to a square in the next row, collect the stone on that square, and so on until you reach the last row.
- When you move from one square to a square in the next row, you can only move to the square just below it or diagonally to the left or right.

Given the values of h and w, and the value of token on each square, write a program to compute the maximum possible total token value that you can grab in one single trip from the first row to the last row.

INPUT: The first line has two integers; the number of rows, h, and the number of columns, w, $(1 \leq h, w \leq 9)$.
Next, there are h lines of inputs. The i^{th} line specifies the token values of the i^{th} row from the front. Each line has w integers, where each integer m $(0 \leq m \leq 100)$ is the token value on that square. The integers are separated by a space.

OUTPUT: The maximum possible total value of tokens that you can grab.

EXAMPLE

INPUT	OUTPUT
6 5 6 2 5 3 1 3 1 8 4 2 2 1 3 1 1 1 2 2 1 6 2 2 1 4 3 2 1 4 5 4	29

Elaboration: 5+8+1+6+4+5 = 29