
Queens (3)**P38211_en**

Write a program to print the lexicographically smallest way to place n queens on an $n \times n$ chessboard so that no queen threatens another queen.

Input

Input consists of a natural number $n > 0$.

Output

Mark the queens with a 'Q', and the empty positions with a dot. Print the lexicographically smallest way (by rows, from top to bottom, and assuming that a 'Q' is smaller than a dot) to place n queens on an $n \times n$ chessboard so that no queen threatens another queen. If there is no solution, print "NO SOLUTION".

Sample input 1

20

Sample output 1

```
Q.....
..Q.....
...Q.....
.Q.....
...Q.....
.....Q.....
.....Q.....
.....Q.....
.....Q.....
.....Q.....
.....Q.....
.....Q.....
.....Q.....
.....Q.....
.....Q.....
.....Q.....
.....Q.....
.....Q.....
.....Q.....
.....Q.....
```

Sample input 2

3

Sample output 2

NO SOLUTION

Problem information

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