
Chess board (4)**X42055_en**

Write code for, given a non-negative integer n , where $n = 2^k$ for some $k \geq 1$, printing a chess board of size n , as shown in the examples.

The program must implement and use the CHESS-BOARD function, which can be iterative or recursive and is not allowed to perform input/output operations.

Make one submission with Python code and another submission with C++ code.

Input

The input is an integer n of the form $n = 2^k$ for some $k \geq 1$.

Output

The output is a chess board of size n .

Observation

The size n of a chess board is always of the form $n = 2^k$ for some $k \geq 1$.

Sample input 1

2

Sample output 101
10**Sample input 2**

4

Sample output 20101
1010
0101
1010**Sample input 3**

8

Sample output 301010101
10101010
01010101
10101010
01010101
10101010
01010101
10101010**Problem information**

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