Latin square   P18900_en

Write a program that prints all the latin squares $n \times n$ with the first row in increasing order. A latin square must contain all the nummbers between 0 and $n - 1$ in each row and column.

Input

Input consists of a natural number $1 \leq n \leq 5$.

Output

Your program must print all the latin squares $n \times n$ with the first row in increasing order. It must print a line in white after each combination.

Information about the checker

You can print the solutions to this exercise in any order.

Sample input 1

3

Sample output 1

```
012
120
201

012
201
120
```

Problem information

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