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 $1 \le n \le 5$.

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

3

Sample output

```
012
120
201

012
201
120
```

Problem information

Author : Salvador Roura
Translator : Carlos Molina
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