Zeros and ones (1)   P12828_en

Write a backtracking program to print all the combinations of z zeros and o ones such that $z + o = n$, for a given n.

Input

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

Output

Print all the combinations of z zeros and o ones such that $z + o = n$, one per line and in lexicographical order.

Observation

Although a backtracking program is not really necessary to solve this exercise, implement it anyway for the sake of practice.

Sample input

3

Sample output

```
0 0 0
0 0 1
0 1 0
0 1 1
1 0 0
1 0 1
1 1 0
1 1 1
```

Problem information

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Generation : 2013-09-02 14:56:28