

# [PI027] - Bits

You are a digital wizard, living in a world where everything is built from 0s and 1s — the language of machines.

Today's challenge from the Binary Council is simple but essential. They ask you to generate every possible combination of bits for a given number of positions. From security to data encoding, everything in this world depends on your ability to produce clean and complete binary sequences.

Can you rise to the challenge and list all binary strings of a given length?

## Task

Given an integer  $n$ , print all possible binary strings of length  $n$ , in increasing order, starting from all 0s to all 1s.

## Input

A single integer  $n$  ( $1 \leq n \leq 15$ ) representing the number of bits in each binary string.

## Output

Print  $2^n$  lines, each with a binary string.

Each binary string consists of a string with just 1s and 0s.

**Sugestão:** think of a recursive solution with backtracking (see notes from lectures on recursion).

## Example 1

### Input

3

### Output

```
000
001
010
011
100
101
110
111
```

## Example 2

### Input

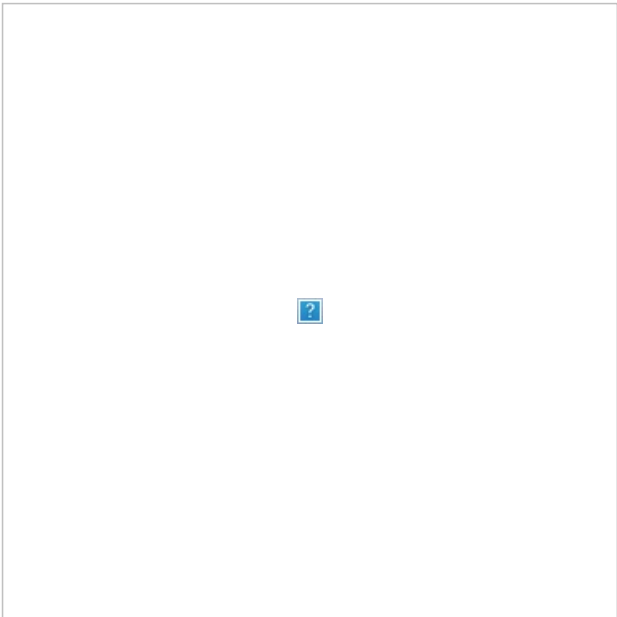
1

### Output

```
0
1
```

## Example 3

### Input



## Output

00  
01  
10  
11