

## B. Sonya and Exhibition

time limit per test

1 second

memory limit per test

256 megabytes

input

standard input

output

standard output

Sonya decided to organize an exhibition of flowers. Since the girl likes only roses and lilies, she decided that only these two kinds of flowers should be in this exhibition.

There are  $n$  flowers in a row in the exhibition. Sonya can put either a rose or a lily in the  $i$ -th position. Thus each of  $n$  positions should contain exactly one flower: a rose or a lily.

She knows that exactly  $m$  people will visit this exhibition. The  $i$ -th visitor will visit all flowers from  $l_i$  to  $r_i$  inclusive. The girl knows that each segment has its own *beauty* that is equal to the product of the number of roses and the number of lilies.

Sonya wants her exhibition to be liked by a lot of people. That is why she wants to put the flowers in such way that the sum of *beauties* of all segments would be maximum possible.

### Input

The first line contains two integers  $n$  and  $m$  ( $1 \leq n, m \leq 10^3$ ) — the number of flowers and visitors respectively.

Each of the next  $m$  lines contains two integers  $l_i$  and  $r_i$  ( $1 \leq l_i \leq r_i \leq n$ ), meaning that  $i$ -th visitor will visit all flowers from  $l_i$  to  $r_i$  inclusive.

### Output

Print the string of  $n$  characters. The  $i$ -th symbol should be «0» if you want to put a rose in the  $i$ -th position, otherwise «1» if you want to put a lily.

If there are multiple answers, print any.

### Examples

#### input

Copy

```
5 3
1 3
2 4
2 5
```

#### output

Copy

```
01100
```

#### input

Copy

```
6 3
5 6
1 4
4 6
```

#### output

Copy

110010

### Note

In the first example, Sonya can put roses in the first, fourth, and fifth positions, and lilies in the second and third positions;

- in the segment  $[1...3]$ , there are one rose and two lilies, so the *beauty* is equal to  $1 \cdot 2 = 2$ ;
- in the segment  $[2...4]$ , there are one rose and two lilies, so the *beauty* is equal to  $1 \cdot 2 = 2$ ;
- in the segment  $[2...5]$ , there are two roses and two lilies, so the *beauty* is equal to  $2 \cdot 2 = 4$ .

The total *beauty* is equal to  $2 + 2 + 4 = 8$ .

In the second example, Sonya can put roses in the third, fourth, and sixth positions, and lilies in the first, second, and fifth positions;

- in the segment  $[5...6]$ , there are one rose and one lily, so the *beauty* is equal to  $1 \cdot 1 = 1$ ;
- in the segment  $[1...4]$ , there are two roses and two lilies, so the *beauty* is equal to  $2 \cdot 2 = 4$ ;
- in the segment  $[4...6]$ , there are two roses and one lily, so the *beauty* is equal to  $2 \cdot 1 = 2$ .

The total *beauty* is equal to  $1 + 4 + 2 = 7$ .