# 779. K-th Symbol in Grammar

## Description

We build a table of `n` rows ( **1-indexed** ). We start by writing `0` in the `1 st` row. Now in every subsequent row, we look at the previous row and replace each occurrence of `0` with `01`, and each occurrence of `1` with `10`.

- For example, for `n = 3`, the `1 st` row is `0`, the `2 nd` row is `01`, and the `3 rd` row is `0110`.

Given two integer `n` and `k`, return the `k th` ( **1-indexed** ) symbol in the `n th` row of a table of `n` rows.

### Example 1:

```
Input: n = 1, k = 1
Output: 0
Explanation: row 1: 0
```

### Example 2:

```
Input: n = 2, k = 1
Output: 0
Explanation:
row 1: 0
row 2: 0 1
```

### Example 3:

```
Input: n = 2, k = 2
Output: 1
Explanation:
row 1: 0
row 2: 0 1
```

### Constraints:

- `1 <= n <= 30`
- `1 <= k <= 2 n - 1`