- Create a list, $seqList$, of N empty sequences, where each sequence is indexed from 0 to $N-1$. The elements within each of the N sequences also use 0-indexing.
- Create an integer, $lastAnswer$, and initialize it to 0.
- The 2 types of queries that can be performed on your list of sequences ($seqList$) are described below:
  1. Query: `1 x y`
     1. Find the sequence, seq, at index $((x \oplus lastAnswer) \% N)$ in $seqList$.
     2. Append integer y to sequence seq.
  2. Query: `2 x y`
     1. Find the sequence, seq, at index $((x \oplus lastAnswer) \% N)$ in $seqList$.
     2. Find the value of element $y \% size$ in seq (where $size$ is the size of seq) and assign it to $lastAnswer$.
     3. Print the new value of $lastAnswer$ on a new line

Task
Given N, Q, and Q queries, execute each query.

Note: $\oplus$ is the *bitwise XOR* operation, which corresponds to the ^ operator in most languages. Learn more about it on Wikipedia.

Input Format

The first line contains two space-separated integers, N (the number of sequences) and Q (the number of queries), respectively.
Each of the Q subsequent lines contains a query in the format defined above.

Constraints

- $1 \leq N, Q \leq 10^5$
- $0 \leq x \leq 10^9$
- $0 \leq y \leq 10^9$
- It is guaranteed that query type 2 will never query an empty sequence or index.

Output Format

For each type 2 query, print the updated value of $lastAnswer$ on a new line.

Sample Input

```
2 5
1 0 5
1 1 7
1 0 3
2 1 0
2 1 1
```

Sample Output

```
7
3
```

Explanation

Initial Values:
$N = 2$
$lastAnswer = 0$
S_0 = [ ]
S_1 = [ ]

Query 0: Append 5 to sequence $((0 \oplus 0) \% 2) = 0$.
$lastAnswer = 0$
S_0 = [5]
S_1 = [ ]

Query 1: Append 7 to sequence $((1 \oplus 0) \% 2) = 1$.
S_0 = [5]
S_1 = [7]

Query 2: Append 3 to sequence $((0 \oplus 0) \% 2) = 0$.
$lastAnswer = 0$
S_0 = [5, 3]
S_1 = [7]

Query 3: Assign the value at index 0 of sequence $((1 \oplus 0) \% 2) = 1$ to $lastAnswer$, print $lastAnswer$.
$lastAnswer = 7$
S_0 = [5, 3]
S_1 = [7]

7

Query 4: Assign the value at index 1 of sequence $((1 \oplus 7) \% 2) = 0$ to $lastAnswer$, print $lastAnswer$.
$lastAnswer = 3$
S_0 = [5, 3]
S_1 = [7]

3