Dynamic Array

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There are N sequences. All of them are initially empty, and you are given a variable $lastans = 0$. You are given Q queries of two different types:

- "$1\ x\ y$" - Insert y at the end of the $((x \oplus lastans) \bmod N)^{\text{th}}$ sequence.
- "$2\ x\ y$" - Print the value of the $(y \bmod size)^{\text{th}}$ element of the $((x \oplus lastans) \bmod N)^{\text{th}}$ sequence. Here, $size$ denotes the size of the related sequence. Then, assign this integer to $lastans$.

Note: You may assume that, for the second type of query, the related sequence will not be an empty sequence. Sequences and the elements of each sequence are indexed by zero-based numbering.

The $\oplus$ symbol denotes the *xor* operation. You can get more information about it from Wikipedia. It is defined as ^ in most of the modern programming languages.

Input Format

The first line consists of N, number of sequences, and Q, number of queries, separated by a space. The following Q lines contains one of the query types described above.

Constraints

$1 \leq N, Q \leq 10^5$
$0 \leq x \leq 10^9$
$0 \leq y \leq 10^9$

Output Format

For each query of type two, print the answer 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

The first sequence is $5, 3$ and the second sequence is 7.

Submissions: 1093

Max Score: 15

Difficulty: Difficult

More

C++

```
#include <cmath>
#include <cstdio>
#include <vector>
#include <iostream>
#include <algorithm>
using namespace std;


int main() {
    /* Enter your code here. Read input from STDIN. Print output to STDOUT */
    return 0;
}

```

Line: 1 Col: 1

Upload Code as File Test against custom input Run Code Submit Code