# **Dynamic Array**



- 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, *lastAns*, 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  $((x \oplus lastAns) \% N)$  in seqList.
    - 2. Append integer y to sequence seq.
  - 2. Query: 2 x y
    - 1. Find the sequence, seq, at index (  $(x \oplus lastAns) \% N$  ) in seqList.
    - 2. Find the value of element y % size in seq (where size is the size of seq) and assign it to lastAns.
    - 3. Print the new value of lastAns 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  $\ ^{\circ}$  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.

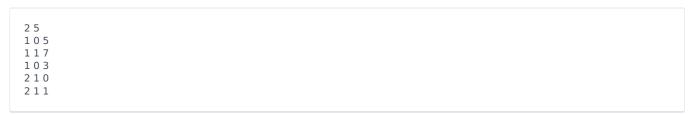
#### **Constraints**

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

#### **Output Format**

For each type  ${f 2}$  query, print the updated value of  ${\it lastAns}$  on a new line.

## **Sample Input**



### **Sample Output**

# **Explanation**

Initial Values:

$$N = 2$$

lastAns=0

$$S_0 = \{\}$$

$$S_1 = \{\}$$

*Query 0:* Append 5 to sequence  $((0 \oplus 0) \% 2) = 0$ .

$$lastAns = 0$$

$$S_0 = \{5\}$$

$$S_1 = \{\}$$

*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.

lastAns = 0

$$S_0 = \{5, 3\}$$

$$S_1 = \{7\}$$

Query 3: Assign the value at index 0 of sequence  $((1 \oplus 0) \% 2) = 1$  to lastAns, print lastAns.

lastans = 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 lastAns, print lastAns.

lastans = 3

$$S_0=\{5,3\}$$

$$S_1 = \{7\}$$

3