Dynamic Array



- Declare a 2-dimensional array, arr, of n empty arrays. All arrays are zero indexed.
- Declare an integer, *lastAnswer*, and initialize it to 0.
- There are 2 types of queries, given as an array of strings for you to parse:
 - 1. Query: 1 x y
 - 1. Let $idx = ((x \oplus lastAnswer) \% n)$.
 - 2. Append the integer y to arr[idx].
 - 2. Query: 2 x y
 - 1. Let $idx = ((x \oplus lastAnswer) \% n)$.
 - 2. Assign the value arr[idx][y % size(arr[idx])] to lastAnswer.
 - 3. Store the new value of lastAnswer to an answers array.

Note: \oplus is the *bitwise XOR* operation, which corresponds to the $^{\wedge}$ operator in most languages. Learn more about it on Wikipedia. % is the modulo operator. Finally, size(arr[idx]) is the number of elements in arr[idx]

Function Description

Complete the dynamicArray function below.

dynamicArray has the following parameters:

- int n: the number of empty arrays to initialize in arr
- string queries[q]: query strings that contain 3 space-separated integers

Returns

• int[]: the results of each type 2 query in the order they are presented

Input Format

The first line contains two space-separated integers, n, the size of arr to create, and q, the number of queries, respectively.

Each of the q subsequent lines contains a query string, queries[i].

Constraints

- $1 \le n, q \le 10^5$
- $0 \le x, y \le 10^9$
- It is guaranteed that query type 2 will never query an empty array or index.

Sample Input

```
2 5
```

Sample Output

```
7
3
```

```
Explanation
Initial Values:
n = 2
lastAnswer = 0
arr[0] = []
arr[1] = []
Query 0: Append 5 to arr[((0 \oplus 0) \% 2)] = arr[0].
lastAnswer = 0
arr[0] = [5]
arr[1] = []
Query 1: Append 7 to arr[((1 \oplus 0) \% 2)] = arr[1].
arr[0] = [5]
arr[1] = [7]
Query 2: Append 3 to arr[((0 \oplus 0) \% 2)] = arr[0].
lastAnswer=0 \\
arr[0] = [5, 3]
arr[1] = [7]
Query 3: Assign the value at index 0 of arr[((1 \oplus 0) \% 2)] = arr[1] to lastAnswer, print
lastAnswer.
lastAnswer = 7
arr[0] = [5, 3]
arr[1] = [7]
```

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