

Frequency Queries

You are given q queries. Each query is of the form two integers described below:

- **1 x** : Insert x in your data structure.
- **2 y** : Delete one occurrence of y from your data structure, if present.
- **3 z** : Check if any integer is present whose frequency is exactly z . If yes, print 1 else 0.

The queries are given in the form of a 2-D array *queries* of size q where *queries* $[i][0]$ contains the operation, and *queries* $[i][1]$ contains the data element. For example, you are given array *queries* = [(1, 1), (2, 2), (3, 2), (1, 1), (1, 1), (2, 1), (3, 2)]. The results of each operation are:

Operation	Array	Output
(1,1)	[1]	
(2,2)	[1]	
(3,2)		0
(1,1)	[1,1]	
(1,1)	[1,1,1]	
(2,1)	[1,1]	
(3,2)		1

Return an array with the output: [0, 1].

Function Description

Complete the *freqQuery* function in the editor below. It must return an array of integers where each element is a 1 if there is at least one element value with the queried number of occurrences in the current array, or 0 if there is not.

freqQuery has the following parameter(s):

- *queries*: a 2-d array of integers

Input Format

The first line contains of an integer q , the number of queries.

Each of the next q lines contains two integers denoting the 2-d array *queries*.

Constraints

- $1 \leq q \leq 10^6$
- $1 \leq x, y, z \leq 10^9$
- All *queries* $[i][0] \in \{1, 2, 3\}$
- $1 \leq \text{queries}[i][1] \leq 10^9$

Output Format

Return an integer array consisting of all the outputs of queries of type 3.

Sample Input 0

```
8
1 5
1 6
3 2
1 10
1 10
1 6
2 5
3 2
```

Sample Output 0

```
0
1
```

Explanation 0

For the first query of type **3**, there is no integer whose frequency is **2** (*array* = [5, 6]). So answer is **0**.

For the second query of type **3**, there are two integers in *array* = [6, 10, 10, 6] whose frequency is **2** (integers = **6** and **10**). So, the answer is **1**.

Sample Input 1

```
4
3 4
2 1003
1 16
3 1
```

Sample Output 1

```
0
1
```

Explanation 1

For the first query of type **3**, there is no integer of frequency **4**. The answer is **0**.

For the second query of type **3**, there is one integer, **16** of frequency **1** so the answer is **1**.

Sample Input 2

```
10
1 3
2 3
3 2
1 4
1 5
1 5
1 4
3 2
2 4
3 2
```

Sample Output 2

```
0
1
1
```

Explanation 2

When the first output query is run, the array is empty. We insert two **4**'s and two **5**'s before the second output query, $arr = [4, 5, 5, 4]$ so there are two instances of elements occurring twice. We delete a **4** and run the same query. Now only the instances of **5** satisfy the query.