

DMPG '19 S6 - A Strange Array

Time limit: 2.5s **Memory limit:** 256M

Roger has a strange array consisting of N elements, each of which is either 1 or 2. He also has Q queries, each of the form $l\ r\ x$ which means that Roger wants to know whether there exists a subarray $[a, b]$ where $l \leq a \leq b \leq r$ whose sum of elements is exactly x .

Constraints

For all subtasks:

$$1 \leq N, Q \leq 1\,000\,000$$

$$1 \leq l \leq r \leq N$$

$$1 \leq x \leq 2N$$

Each element of the array is either 1 or 2.

Subtask 1 [20%]

$$1 \leq N, Q \leq 2\,000$$

Subtask 2 [80%]

No additional constraints.

Input Specification

On the first line, there are two space-separated integers, N and Q , denoting the number of elements in the array and the number of queries.

On the second line, there are N space-separated integers, the elements of the array.

On the next Q lines, there are three space-separated integers, $l\ r\ x$, denoting a query.

Output Specification

Output Q lines, where the i -th line is if there exists a subarray satisfying the conditions of Roger's i -th query, or otherwise.

Sample Input

```
7 3
1 2 2 1 1 2 1
2 4 3
1 7 8
2 5 7
```

Sample Output

YES
YES
NO