Task «Geometry»

Implement a data structure that stores a set of points on a plane with rectangular Cartesian coordinates and handles two types of queries:

- Add point with coordinates (x, y). If a point with such coordinates has already been added, the set does not change;
- Check whether inside or the border of a rectangle with sides parallel to the coordinate axes and opposite angles at points $(0, 0)$ and (x, y) contains at least one of the added points.

Initially, the set of points is empty.

Input format

The first line of the input contains an integer N ($1 \le N \le 100'000$) – the number of requests.

Each of the following N lines contains a description of the next request: three integers t, x and y – the request type and point coordinates ($1 \le t \le 2$; $1 \le x, y \le 10^9$).

If $t = 1$, then this is a request to add a point (x, y).

If $t = 2$, then this is a request to check if one of the added points exists in a rectangle with corners at points $(0, 0)$ and (x, y).

Output format

For each query of the second type, print «YES» if at least one of the added points lies inside or on the border of the given rectangle, and «NO» otherwise.

Sample input:

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

Sample output:

```
YES
NO
YES
```