COI '12 #3 Snjeguljica

Time limit: 1.0s **Memory limit:** 32M

In a small village beyond seven hills and seven seas, Snow White lives together with N dwarves who spend all their time eating and playing League of Legends. Snow White wants to put an end to this, so she has organized gym classes for them.

At the beginning of each class, the dwarves must **stand in line**, ordered by their **height**. For the purposes of this task, assume that the dwarves have heights $1, 2, \ldots, N$ (each exactly once). However, the dwarves' intelligence has somewhat deteriorated from the unhealthy lifestyle, so they are incapable of ordering themselves by height. That's why Snow White helps them by issuing commands of the form:

- `1 X Y` -- dwarves at positions X and Y in the line must switch places.

She also checks their ordering by issuing queries of the form:

- `2 A B` -- do dwarves with heights $A, A+1, \ldots, B$ (not necessarily in that order) occupy a **contiguous** subsequence of the current line?

Help the doofus dwarves follow Snow White's instructions and respond to her queries.

Input Specification

The first line of input contains the two positive integers N and M, the number of dwarves and the number of Snow White's requests, respectively $(2 \leq N, M \leq 200\,000)$.

The following line contains N space-separated positive integers from 1 to N, each exactly once, representing the initial arrangement of the dwarves.

Each of the following M lines contains a single Snow White's request, of the form `1 X Y` $(1 \leq X, Y \leq N, X \neq Y)$ or `2 A B` $(1 \leq A \leq B \leq N)$, as described in the problem statement.

Output Specification

The output must contain one line for each request of type 2, containing the reply to the query, either `YES` or `NO`.

Scoring

In test data worth a total of 50 points, for all requests of type 2, the constraint $B - A \leq 50$ holds.

Sample Input 1

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

Sample Output 1

```
NO
YES
```

Sample Input 2

```
7 7
4 7 3 5 1 2 6
2 1 7
1 3 7
2 4 6
2 4 7
2 1 4
1 1 4
2 1 4
```

Sample Output 2

```
YES
NO
YES
NO
YES
```