Final Day

N students are taking a 4-day exam. There is a 300-point test on each day, for a total of 1200 points.

The first three days of the exam are already over, and the fourth day is now about to begin. The i-th student $(1 \le i \le N)$ got $P_{i,j}$ points on the j-th day $(1 \le j \le 3)$.

For each student, determine whether it is possible that he/she is ranked in the top K after the fourth day. Here, the rank of a student after the fourth day is defined as the number of students whose total scores over the four days are higher than that of the student, plus 1.

Input Format

The input consists of $N + 1$ lines.
The first line consists of two integers, N, K.
The next N lines, the ith of which consists of three integers, $P_{i,1}$, $P_{i,2}$, $P_{i,3}$.

Output Format

Your program must print to standard output.

The output should consist of N lines.
For each query in order, separated by new lines, output Yes if it is possible for that student to reach the top K, and No otherwise.

Subtasks

For all test cases, the input will satisfy the following bounds:

- $1 \le K \le N \le 2 \cdot 10^5$

- $0 \le P_{i,j} \le 300$ $(1 \le i \le N, 1 \le j \le 3)$

Your program will be tested on input instances that satisfy the following restrictions:

Subtask	Marks	Additional Constraints
1	35	$K = 1$
2	40	$N \le 10^3$
3	25	No additional constraints

Sample Testcase 1

Input:

```
3 1
178 205 132
112 220 96
36 64 20
```

Output:

```
Yes
Yes
No
```

Explanation:

If every student scores 100 on the fourth day, the 1-st student will rank 1-st.

If the 2-nd student scores 100 and the other students score 0 on the fourth day, the 2-nd student will rank 1-st.

The 3-rd student will never rank 1-st.

Sample Testcase 2

Input:

```
2 1
300 300 300
200 200 200
```

Output:

```
Yes
Yes
```

Sample Testcase 3

Input:

```
4 2
127 235 78
192 134 298
28 56 42
96 120 250
```

Output:

```
Yes
Yes
No
Yes
```