Buildings

There are N buildings in a row, numbered 1 to N from left to right. The ith building has height H_i.

Two buildings i and j are *far apart* if $|i - j| \geq K$.[1] Additionally, the *difference in heights* of the two buildings is $|H_i - H_j|$.

You must answer a YES/NO question: Are there two far apart buildings with a difference in heights of exactly X?

Subtasks and Constraints

For all subtasks:

- $2 \leq N \leq 200\,000$.
- $1 \leq K < N$.
- $0 \leq X \leq 1\,000\,000$.
- $1 \leq H_i \leq 1\,000\,000$ for all i.

Additional constraints for each subtask are given below.

Subtask	Points	Additional constraints
1	25	$N \leq 1000$.
2	30	$K = 1$ and $X = 0$.
3	30	$X = 0$.
4	15	No additional constraints.

Input

- The first line of input contains the integers N, K, and X.
- The second line contains N integers $H_1, H_2, \ldots, H_N$.

Output

Output `YES` if there are two far apart buildings with a difference in heights of exactly X, and `NO` otherwise.

[1] The notation $|x|$ denotes the absolute value of x. The absolute value of a number is equivalent to its distance from 0. For example, $|2| = |-2| = 2$.

Sample Input 1

```
4 2 0
2 4 3 4
```

Sample Output 1

```
YES
```

Sample Input 2

```
4 3 0
2 4 3 4
```

Sample Output 2

```
NO
```

Sample Input 3

```
5 1 6
9 7 5 3 1
```

Sample Output 3

```
YES
```

Sample Input 4

```
5 1 5
9 7 5 3 1
```

Sample Output 4

```
NO
```

Explanation

In the 1st sample case, $K = 2$ and $X = 0$. The 2nd and 4th buildings are far apart (because $|2 - 4| \geq K$) and their difference in heights is $|H_2 - H_4| = |4 - 4| = X$, and so the answer is `YES`.

In the 2nd sample case, $K = 3$, $X = 0$, and the buildings are the same as the 1st case. The 2nd and 4th buildings are not far apart when $K = 3$, and the answer is `NO`.

In the 3rd sample case, $K = 1$ and $X = 6$. The 1st and 4th buildings are far apart and have a difference in heights of X, and so the answer is `YES`. The 2nd and 5th buildings are also far apart and have a difference in heights of X.

In the 4th sample case, $K = 1$ and $X = 5$. No buildings have a difference in heights of X and so the answer is `NO`.