

# Problem M: Montage Matrix

Time limit: 2 seconds

You have been hired by the organizing committee of the Olympic Games to take pictures of the event. Of course, you focus on the most important task: taking pictures of the winners!

Unfortunately, you quickly realize that for some competitions, it is quite complicated to take the perfect shot. Especially troubling are team sports like field hockey with a large number of players, both on the field and later on the photo.



Argentinian Field Hockey Silver Medal winners 2020.  
By Secretaría de Deportes on Wikimedia

The main challenge with so many people is to fit everyone on the photo! After all, so many people do not fit in the same row without anybody being cut off the photo. Therefore, each sports team must form multiple rows with at most  $w$  people per row.

Of course, for a perfect picture, all players must be visible on the photo and not be blocked by someone standing in front of them. This means that for each person on the photo, only people of strictly smaller height may stand in front of them.

However, you are unsure whether this is even possible for all teams taking part in the competition. Determine whether a given team can be correctly arranged for the photo.

## Input

The input consists of:

- One line with two integers  $n$  and  $w$  ( $1 \leq n \leq 2 \cdot 10^5$ ,  $1 \leq w \leq n$ ), where  $n$  is the number of people in the team and  $w$  is the maximum number of people in one row.
- One line with  $n$  integers  $h_1, \dots, h_n$  ( $0 \leq h_i \leq 10^9$  for each  $i$ ), where  $h_i$  is the height of person  $i$ .

## Output

If it is possible to arrange all people for the photo so that everyone is visible, then output “yes”. Otherwise, output “no”.

### Sample Input 1

```
5 3
180 160 200 190 150
```

### Sample Output 1

```
yes
```

### Sample Input 2

```
3 1
150 150 140
```

### Sample Output 2

```
no
```

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