mahdi and math

Input file:	standard input
Output file:	standard output
Time limit:	1 second
Memory limit:	256 megabytes

Mahdi is a math lover . He has n math problems , the i'th problem has difficulty a_i. But mahdi doesn't want to do all of them , so he decides to choose k problems with different diffculties (there will be no two problems of the k chosen problems that have the same difficulty).

Mahdi wants to solve the problems in an increasing way (that if b_1 b_2 ... b_k are the k chosen problems , then diff(b_1)<diff(b_2)<..<diff(b_k) where diff(b_i) is the difficulty of the problem b_i) . Also he wants to maximze the maximum difference between every two consecutive problems (the maximum difference between every two consecutive problems equal to max (diff(b_{i+1}) - diff(b_i)) for all i from 0 to $k-1$).

Mahdi is busy doing other stuff (studying physics) so he asked you to help him determine if there is a way to choose k problems that satisfy the conditions, and if yes you need to find the maximum possible difference between 2 conssecutive problems.

See the notes for more understanding .

Input

The first line contains two integers n and k ($2 \leq n \leq 5.10^5$, $2 \leq k \leq n$) — the number of the math problems and the number of the problems mahdi will choose.

The second line contains n integers a_1,a_2,...,a_n ($1 \leq a_i \leq 10^6$) — the difficulties of the problems .

Output

Print "NO"if there is no possible solution .

Otherwise print "YES"and the maximum possible difference between 2 consecutive problems.

Examples

standard input	standard output
6 6 1 3 5 2 6 7	YES 2
5 3 1 5 6 8 9	YES 7

Note

In the seconde example he should choose 1 ,8 and 9 because he will achieve the maximum possible difference which is 8-1 =7 .