Max Min



Given a list of N integers, your task is to select K integers from the list such that its *unfairness* is minimized.

if $(x_1, x_2, x_3, \ldots, x_k)$ are K numbers selected from the list N, the unfairness is defined as

$$max(x_1,x_2,\ldots,x_k)-min(x_1,x_2,\ldots,x_k)$$

where max denotes the largest integer among the elements of K, and min denotes the smallest integer among the elements of K.

Input Format

The first line contains an integer N.

The second line contains an integer K.

N lines follow. Each line contains an integer that belongs to the list N.

Note: Integers in the list N may not be unique.

Output Format

An integer that denotes the minimum possible value of unfairness.

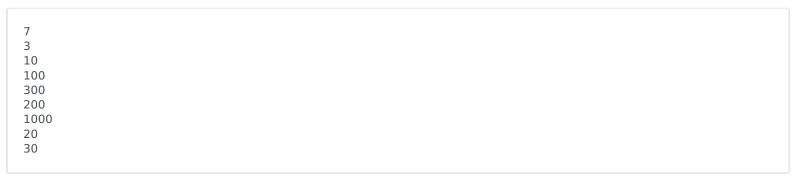
Constraints

 $2 < N < 10^5$

 $2 \le K \le N$

 $0 \le integer in N \le 10^9$

Sample Input #00



Sample Output #00

20

Explanation #00

Here K=3; selecting the 3 integers such that K=10,20,30, unfairness equals

 $\max(10,20,30) - \min(10,20,30) = 30 - 10 = 20$

Sample Input #01

| 10 | |
|----|--|
| 4 | |
| | |
| 2 | |
| 3 | |
| 4 | |



Sample Output #01

3

Explanation #01

Here K=4; selecting the 4 integers 1,2,3,4, unfairness equals

 $\max(1,2,3,4) - \min(1,2,3,4) = 4 - 1 = 3$

Sample Input #02

6 3 10 20 30 100 101

Sample Output #02

2

Explanation #02

Here K=3; the 3 integers so that the difference between the maximum and the minimum is the smallest are 100,101,102, which means unfairness equals

 $\max(100, 101, 102) - \min(100, 101, 102) = 102 - 100 = 2$