# **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.

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

#### **Input Format**

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The first line contains an integer N.

The second line contains an integer K.

 $m{N}$  lines follow. Each line contains an integer that belongs to the list  $m{N}$ .

#### **Constraints**

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 $2 \le N \le 10^5$ 

 $2 \le K \le N$ 

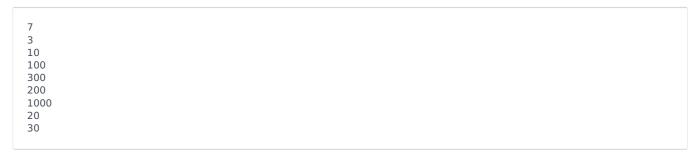
 $0 \le integer in N \le 10^9$ 

#### **Output Format**

#### **Output Format**

An integer that denotes the minimum possible value of *unfairness*.

#### Sample Input 0



#### Sample Output 0

20

## **Explanation 0**

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

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

## Sample Input 1

```
1
2
3
4
10
20
30
40
100
200
```

# Sample Output 1

# **Explanation 1**

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

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