Problem F

Maximum Subset

Let us define the value of a multiset of integers is the minimum difference between any two distinct elements. If a multiset contains two elements with the same value, then the two elements are considered different elements thus the value of the multiset is 0.

Given a multiset of integers A consisting of N elements, we want to find the value of the subset of A consisting of K elements which has the maximum value.

Input

The first line contains two integers: N K ($2 \le K \le N \le 100{,}000$) in a line denoting the number of elements of A and the number of elements of the subset of A we are looking for. The second line contains N integers: $A_1, A_2, \cdots, A_N$ ($0 \le A_i \le 1{,}000{,}000{,}000$) representing the elements of set A.

Output

The output contains the value of the subset of A consisting of K elements which has the maximum value, in a line.

Sample Input	Output for Sample Input
4 2 1 2 4 10	9
4 3 1 2 4 10	3
4 4 1 2 4 10	1

Explanation for 1st sample case

On the first sample, the optimal subset is {1, 10}. The value is 10 - 1 = 9.

Explanation for 2nd sample case

On the second sample, the optimal subset is {1, 4, 10}. The value is 4 - 1 = 3.

Explanation for 3rd sample case

On the third sample, the optimal subset is {1, 2, 4, 10}. The value is 2 - 1 = 1.

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