Max Min ★

Problem Submissions Leaderboard Editorial 🖰 Topics

You will be given a list of integers, *arr*, and a single integer *k*. You must create an array of length *k* from elements of *arr* such that its unfairness is minimized. Call that array *arr'*. Unfairness of an array is calculated as

$$max(arr') - min(arr')$$

Where:

- max denotes the largest integer in arr'.
- min denotes the smallest integer in arr'.

Example

$$arr = [1, 4, 7, 2]$$

$$k = 2$$

Pick any two elements, say arr' = [4, 7].

$$unfairness = max(4,7) - min(4,7) = 7 - 4 = 3$$

Testing for all pairs, the solution $oxed{[1,2]}$ provides the minimum unfairness.

Note: Integers in arr may not be unique.

Function Description

Complete the maxMin function in the editor below.

maxMin has the following parameter(s):

- int k: the number of elements to select
- int arr[n]:: an array of integers

Returns

• int: the minimum possible unfairness

Input Format

The first line contains an integer $m{n}$, the number of elements in array $m{arr}$.

The second line contains an integer $m{k}$.

Each of the next n lines contains an integer arr[i] where $0 \le i < n$.

Constraints

$$2 \le n \le 10^5$$

$$2 \le k \le n$$

$$0 \leq arr[i] \leq 10^9$$

Sample Input 0

7

3

10

100

300

200

1000 20

30

Sample Output 0

 20

```
Explanation 0
```

```
Here \pmb{k=3}; selecting the \pmb{3} integers \pmb{10,20,30}, unfairness equals
```

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

Sample Input 1

10

4

1 2

4

10

20

30 40

100

200

Sample Output 1

3

Explanation 1

Here $\emph{k}=\emph{4}$; selecting the $\emph{4}$ integers $\emph{1,2,3,4}$, unfairness equals

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

Sample Input 2

5

1 2

1

2

Sample Output 2

0

Explanation 2

Here k=2. $arr^\prime=[2,2]$ or $arr^\prime=[1,1]$ give the minimum unfairness of 0.

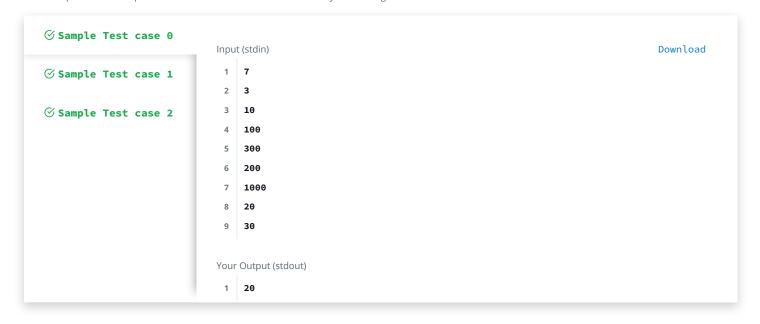
```
▼ 10 [7] (章)

                                                                            Change Theme
                                                                                           JavaScript (Node.js)
21
     });
22
23
     function readLine() {
          return inputString[currentLine++];
```

```
25
 26
 27
     // Complete the maxMin function below.
 28 function maxMin(k, arr) {
 29
         arr.sort((a, b) => a - b);
         let min = Infinity, curr;
 30
         for(let i = 0; i <= arr.length - k; i++) {
 31
 32
             curr = arr[i + k - 1] - arr[i];
 33
             if(min > curr) min = curr;
 34
 35
         return min;
     }
 36
 37
 38
     function main() {
         const ws = fs.createWriteStream(process.env.OUTPUT_PATH);
 39
 40
 41
         const n = parseInt(readLine(), 10);
 42
 43
        const k = parseInt(readLine(), 10);
 44
                                                                                               Line: 35 Col: 16
Run Code
                                                                                                Submit Code
```

Congratulations!

You have passed the sample test cases. Click the submit button to run your code against all the test cases.



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