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 $[1, 2]$ 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 n, the number of elements in array arr.

The second line contains an integer k.

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

Constraints

$2 \leq n \leq 10^5$

$2 \leq k \leq n$

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

Sample Input 0

```
7
3
10
100
300
200
1000
20
30
```

Sample Output 0

```
20
```

Explanation 0

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

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

Sample Input 1

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

Sample Output 1

```
3
```

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
```

Sample Input 2

```
5
2
1
2
1
2
1
```

Sample Output 2

```
0
```

Explanation 2

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

Change Theme JavaScript (Node.js)

```
21  });
22
23  function readLine() {
24      return inputString[currentLine++];
```

```
}

// Complete the maxMin function below.
function maxMin(k, arr) {
    arr.sort((a, b) => a - b);
    let min = Infinity, curr;
    for(let i = 0; i <= arr.length - k; i++) {
        curr = arr[i + k - 1] - arr[i];
        if(min > curr) min = curr;
    }
    return min;
}

function main() {
    const ws = fs.createWriteStream(process.env.OUTPUT_PATH);

    const n = parseInt(readLine(), 10);

    const k = parseInt(readLine(), 10);
```

Line: 35 Col: 16

Upload Code as File | Test against custom input | 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.

Sample Test case 0

Sample Test case 1

Sample Test case 2

Input (stdin) Download

```
7
3
10
100
300
200
1000
20
30
```

Your Output (stdout)

```
20
```