RESPECTABLE

MinMaxDivision

START

Divide array A into K blocks and minimize the largest sum of any block.

Programming language: C++

You are given integers K, M and a non-empty zero-indexed array A consisting of N integers. Every element of the array is not greater than M.

You should divide this array into K blocks of consecutive elements. The size of the block is any integer between 0 and N. Every element of the array should belong to some block.

The sum of the block from X to Y equals A[X] + A[X + 1] + ... + A[Y]. The sum of empty block equals 0.

The *large sum* is the maximal sum of any block.

For example, you are given integers K = 3, M = 5 and array A such that:

```
  A[0] = 2
  A[1] = 1
  A[2] = 5
  A[3] = 1
  A[4] = 2
  A[5] = 2
  A[6] = 2
```

The array can be divided, for example, into the following blocks:

- [2, 1, 5, 1, 2, 2, 2], [], [] with a large sum of 15;
- [2], [1, 5, 1, 2], [2, 2] with a large sum of 9;
- [2, 1, 5], [], [1, 2, 2, 2] with a large sum of 8;
- [2, 1], [5, 1], [2, 2, 2] with a large sum of 6.

The goal is to minimize the large sum. In the above example, 6 is the minimal large sum.

Write a function:

```
    int solution(int K, int M, vector<int> &A);
```

that, given integers K, M and a non-empty zero-indexed array A consisting of N integers, returns the minimal large sum.

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  A[4] = 2
  A[5] = 2
  A[6] = 2
```

the function should return 6, as explained above.

Assume that:

- N and K are integers within the range [1..100,000];
- M is an integer within the range [0..10,000];
- each element of array A is an integer within the range [0..M].

Complexity:

- expected worst-case time complexity is O(N*log(N+M));
- expected worst-case space complexity is O(1), beyond input storage (not counting the storage required for input arguments).

Elements of input arrays can be modified.

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sales@codility.com