

# COCI '14 Contest 1 #5 Zabava

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**Time limit:** 0.6s    **Memory limit:** 256M

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A new student dorm has been opened! It consists of  $M$  buildings, labeled with integers from 1 to  $M$ . The dorm is initially empty, but soon  $N$  students will be moving in at a rate of exactly one student per day.

Each time a new student moves in a building, a big party is being held inside that building. The noise of the party is equal to the number of students located inside the building. The dorm management is not particularly fond of noise, so they will occasionally empty a certain building to keep the parties at a reasonable noise level. They do this by moving all its residents to a completely different student dorm. The management can decide to do this after any day, but they realized that it doesn't pay off to do it more than  $K$  times.

Help the management! Knowing which buildings are being moved in by students, determine the minimal possible total noise level (the sum of noise levels of all  $N$  parties) that can be achieved with emptying some of the buildings at most  $K$  times.

## Input Specification

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The first line of input contains the integers  $N$  ( $1 \leq N \leq 1\,000\,000$ ),  $M$  ( $1 \leq M \leq 100$ ) and  $K$  ( $1 \leq K \leq 500$ ) from the task description.

The  $i^{th}$  line, out of  $N$  in total, contains an integer from the interval  $[1, M]$ : the label of the buildings where a student is moving in on the  $i^{th}$  day.

## Output Specification

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The first and only line of output must contain the required minimal possible total noise level.

## Scoring

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In test cases worth 40 points,  $M = 1$  will hold.

In test cases worth 60 points, it will hold  $N \leq 1\,000$ .

In test cases worth 80 points, it will hold  $N \leq 50\,000$ .

## Sample Input 1

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

## Sample Output 1

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7

## Explanation of Output for Sample Input 1

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The building is emptied after the first and the third day so the noise levels are, respectively, 1, 1, 2, 1, 2.

## Sample Input 2

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```
11 2 3
1
2
1
2
1
2
1
2
1
2
1
```

## Sample Output 2

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18

## Explanation of Output for Sample Input 2

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For example, building 1 is emptied after the fourth and eighth day and building 2 after the sixth day. The noise levels are, respectively, 1, 1, 2, 2, 1, 3, 2, 1, 1, 2, 2.