3D Slices

All submissions
Best submissions

Points: 100 (partial)
Time limit: 0.5s
C#: 0.5s
Java: 1.2s
Memory limit: 32M
C#: 62M
Java: 62M
Author:
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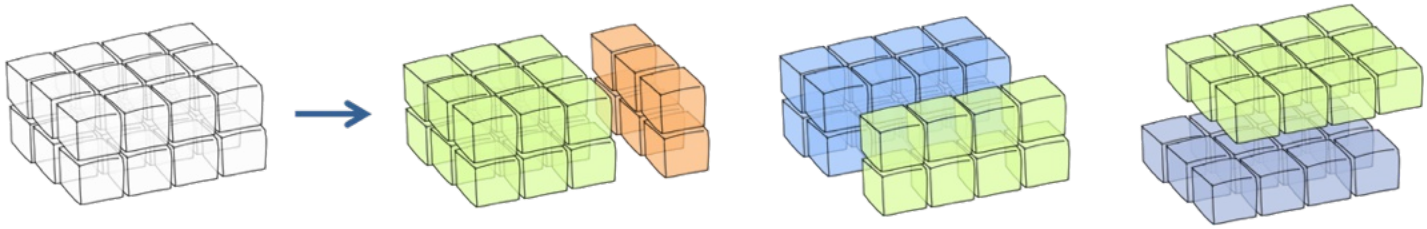
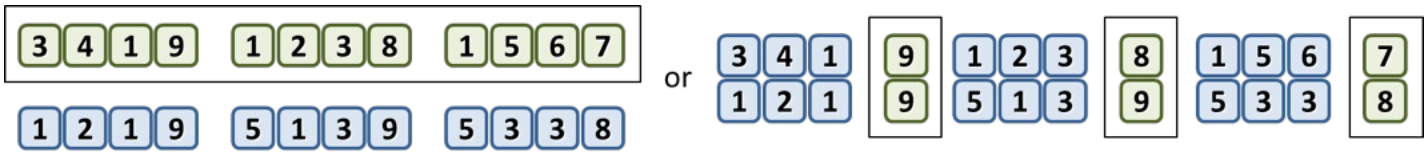
Tags
Arrays
Difficulty
Hard

You are given a **rectangular cuboid** of size **W** (width), **H** (height) and **D** (depth) consisting of **W** * **H** * **D** cubes, each containing an integer number. A cuboid can be **split into two sub-cuboids** by slicing it over some of the planes {x, y}, {x, z} or {y, z}. For example a cuboid of size {4 x 3 x 2} could be split into sub-cubes {4 x 3 x 1} + {4 x 3 x 1} or into {1 x 3 x 2} + {3 x 3 x 2} or by few other ways. The figure below shows few examples how we can slice a cube into two non-empty sub-cubes:



The cuboid is given as layers of matrices holding integer numbers. The figure below shows a cuboid of size 4 x 2 x 3 (width = 4, height = 2, depth = 3):

Your task is to write a program that finds in how many ways we can split the cuboid into two non-empty sub-cuboids such that the sums of the numbers in the obtained sub-cuboids are equal. For example the cuboid at the figure could be split into **equal-sum sub-cuboids** as follows:



Input

- Read from the standard input
- At the first line 3 integers **W**, **H** and **D** are given separated by a space
  - These numbers specify the width, height and depth of the cuboid
- At the next **H** lines the colors of the cubes in the cuboid are given as **D** sequences of exactly **W** integers
  - Each of these sequences consists of **W** integers separated by a single space
  - The sequences of **W** integers are separated one from another by " **|** " (space + vertical line + space).
- The input data will be correct and there is no need to check it explicitly.

Output

- Print to the standard output

- On the single line of the output print the **total number of splits of the cuboid into equal-sum sub-cuboids** .

Constraints

- The numbers **W**, **H** and **D** are all integers in the range [1…100].
- The integers in the cuboid are in the range [-1000…1000]
- Allowed work time for your program: 0.5 seconds.
- Allowed memory: 16 MB.

Sample tests

Input

```
4 2 3
3 4 1 9 | 1 2 3 8 | 1 5 6 7
1 2 1 9 | 5 1 3 9 | 5 3 3 8
```

Copy

Output

```
2
```

Copy

Input

```
2 2 2
1 2 | 3 4
5 6 | 7 8
```

Copy

Output

```
0
```

Copy

Comments

0

radoslav_stamenc
commented 4 months ago

Бихте ли вдигнали времето за C#? Благодаря!

-2