Hacker Country

by cpcs

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There are *N* cities in *Hacker Country*. Each pair of cities are directly connected by a unique directed road, and each road has its own toll that must be paid every time it is used. You're planning a road trip in *Hacker Country*, and its itinerary must satisfy the following conditions:

- You can start in any city.
- You must use 2 or more different roads (meaning you will visit 2 or more cities).
- At the end of your trip, you should be back in your city of origin.
- The average cost (sum of tolls paid per road traveled) should be minimum.

Can you calculate the *minimum average cost* of a trip in *Hacker Country*?

Time Limits
Time limits for this challenge are provided here.

Input Format

The first line is an integer, N (number of cities).
The N subsequent lines of N space-separated integers each describe the respective tolls or traveling from city i to city j; in other words, the j^{th} integer of the i^{th} line denotes the toll for traveling from city i to city j.

Note: As there are no roads connecting a city to itself, the i^{th} integer of line i will always be 0.

Constraints
$1 < N \leq 500$
$0 < toll\ cost \leq 200$
$roads\ traveled \geq 2$

Output Format

Print the *minimum cost* as a rational number p / q (tolls paid over roads traveled). The *greatest common divisor* of p and q should be 1.

Sample Input

```
2
0 1
2 0
```

Sample Output

```
3/2
```

Explanation

The toll from city c_0 to city c_1 is 1. The toll from c_1 to c_0 is 2. Your travel cost $p = 1 + 2 = 3$. Your number of roads traveled is $q = 2$. Thus, we print `3/2` as our answer.

Submissions:496

Max Score:100
Difficulty: Hard

Rate This Challenge:

More

Current Buffer (saved locally, editable) Java 7

```
1  import java.io.*;
2  import java.util.*;
3  import java.text.*;
4  import java.math.*;
5  import java.util.regex.*;
6
7  public class Solution {
8
9      public static void main(String[] args) {
10         /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Solution. */
11     }
12 }
```

Line: 1 Col: 1

Upload Code as File Test against custom input Run Code Submit Code