F1: Easy 5 pt

F2: Medium 15 pt

F3: Hard 55 pt

Micro Kitchens

G1: Easy 5 pt

G2: Medium 25 pt

G3: Hard 50 pt

ZigZag

H1: Easy 10 pt

H2: Medium 20 pt

H3: Hard 55 pt

Types

I1: Easy 20 pt

I2: Medium 50 pt

I3: Hard 80 pt

Wanikani

J1: Easy 10 pt

J2: Medium 35 pt

J3: Hard 45 pt

Re-enact

K1: Easy 15 pt

K2: Medium 40 pt

Problem G1: Micro Kitchens - Easy

5 points

Problem | My Submissions

You are a space planner for a new start-up and need to find the ideal spot in the office to put the micro kitchen.

You must make it as easy as possible to get to by picking the spot that **minimizes the sum of distances from that spot to all employees in the office**. The distance to an employee is the number of moves on the shortest path moving left, right, up, or down (but not diagonally) by one cell at a time.

For now, the office only contains the startup's employees, who work on a single office floor. They don't mind sharing a spot with the micro kitchen and they can walk through each others' desk areas. What are the X and Y coordinates of the best spot to put the micro kitchen, given that $(0, 0)$ is in the top-left, with X coordinates increasing from left to right, and Y coordinates increasing from top to bottom? It's guaranteed that a unique best spot exists.

Input

Your input specifies the layout of the office as follows:

- The first line contains 3 numbers: W, H, and N, representing the *width*, *height* and *number of floors* in the office. In this version of this problem, it's guaranteed that there is only a single floor ($N = 1$).
- What follows is N sets of lines, with the ith set describing the ith floor:
  - Each set consists of H lines that are W characters wide.
  - Sets are separated by an empty line.

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from the left and n characters from the top of the set) represents the contents at position (j, k) of the ith floor. Each cell will be one of the following:

- "." - An empty space
- "o" - An employee's desk area

Output

Your output should be a file containing a single tuple with the (X, Y) coordinates of the optimal spot to put the micro kitchen in.

Constraints

$0 \leq X < W$
$0 \leq Y < H$
$1 \leq W \leq 1000$
$1 \leq H \leq 1000$
$N = 1$

Explanation of Sample

There are 7 employees in the office, the spot that minimizes the sum of the distances that employees have to walk to get to the micro kitchen is **(6, 5)**

Sample Input

```
10 10 1
. . . . . . . . . .
. . . . . . . . . .
. . . . . . . . . .
. . . . . o . . . .
. . . . . . o . . o
. . . . . o . o . .
. . . . . . . . . .
. . . o . . . . . .
. . . . . . . . . o
. . . . . . . . . .
```

Sample Output

```
(6, 5)
```