Problem H1: ZigZag - Easy

10 points Accepted

Problem My Submissions

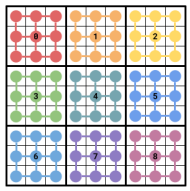
ZigZag is a logic-based, combinatorial number-placement puzzle, similar to Sudoku. The objective is to fill a 9x9 grid so that each zig, zag and square contain all the digits from 0 to 8, inclusive, exactly once.

Zigs are diagonals, running from top left to bottom-right and wrapping around. Zags are diagonals, running from top-right to bottom-left (orthogonal to the zigs) and squares are 3x3 sub-grids, similar to Sudoku.

The following diagrams indicate which Zigs, Zags and Squares each cell in a ZigZag belongs to. In the Zigs diagram (left), all the cells in a Zig share a color and are connected by lines to a cell with the Zig's numeric label. The Zags and Squares diagrams are organised similarly:


Zigs


Zags


Squares

Note that Zigs and Zags wrap around the grid, so each label appears twice in these diagrams.

Given a list of unfinished ZigZags, provide the sum of all numbers in the top three rows of every grid, after the puzzles have been solved.

Input

The input file format is as follows:

- The first line contains a single integer N, indicating the number of grids to follow.
- Each grid is printed with each of its rows on its own line.
- The "." character indicates an empty cell

Output

Your output should be a file containing a single line with a number that's the sum of all numbers in the top three rows of every grid, after the puzzles have been solved.

Constraints

$1 \leq N \leq 100$

Explanation of Sample

There are 3 puzzles in the sample. After solving all of them, the sum of the top three rows of all three of them is **324**

Sample Input

```
3
. . . . 5 6 8 . .
8 6 . 3 2 . . 5 .
. . 0 . 1 . . . 4
. 8 4 . 6 7 . . 1
7 . . 5 4 . . . .
. . 3 0 1 . 5 . 6
. 0 8 2 . . 1 4 .
. 1 . . . 5 2 . .
. 6 . . . 1 . . 7

. . . . . 2 . 0 .
. . 3 . . . . . 2
8 . 4 . . 5 4 . 7
2 . . . . . 0 3 .
. 4 . . 2 . 8 . 6
. . . 3 . . . 1 .
3 7 . 1 . 3 8 . .
2 8 . 6 0 . 7 . .
6 4 1 . 7 . 1 2 6

. . 2 . . . . 0 .
. . . 5 6 . 6 1 2
4 0 . . . 2 4 . 5
3 . . 2 . . . 1 .
. . . . 6 . 8 7 .
. . 4 . . . 0 6 4
. . . 0 . . 7 . .
. 8 . 2 6 . 2 0 5
2 . 0 8 4 . . . 8
```

Sample Output

```
324
```