Constellation

- Problem Description

Three characters { #, *, . } represents a constellation of stars and galaxies in space. Each galaxy is demarcated by # characters. There can be one or many stars in a given galaxy. Stars can only be in shape of vowels { A, E, I, O, U } . A collection of * in the shape of the vowels is a star. A star is contained in a 3x3 block. Stars cannot be overlapping. The dot(.) character denotes empty space.

Given 3xN matrix comprising of { #, *, . } character, find the galaxy and stars within them.

Note: Please pay attention to how vowel **A** is denoted in a 3x3 block in the examples section below.

- Constraints

  3 <= N <= 10^5

-   Input Format

    Input consists of single integer N denoting number of columns.

-   Output

    Output contains vowels (stars) in order of their occurrence within the given galaxy. Galaxy itself is represented by # character.

-   Timeout

     1

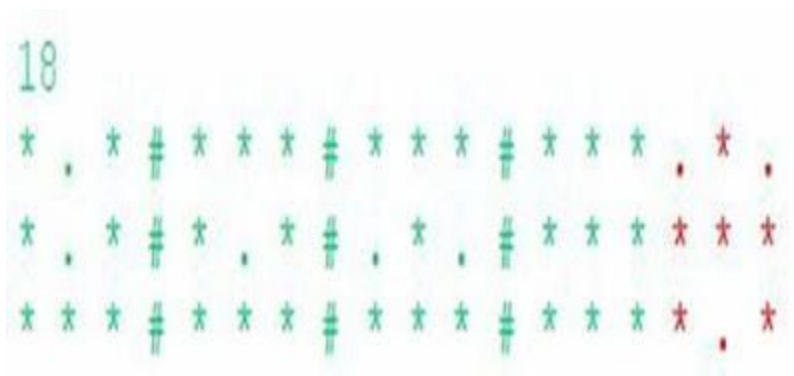-   Explanation

    Example 1

     Input

18

```
*.*#***#***#***.*.
*.*#*.*#.*.#*******
***#***#***#****.*
```

Output

U#O#I#EA

- Explanation

As it can be seen that the stars make the image of the alphabets U, O, I, E and A respectively.

Example 2

Input

12

```
*.*#.***#.*.
*.*#..*.#***
```

```
* * * # . * * * # * . *
```

Output

U#I#A

- Explanation

As it can be seen that the stars make the image of the alphabet U, I and A.

```
12
*  .  *  #  .  *  *  *  #  .  *  .
*  .  *  #  .  .  *  .  #  *  *  *
*  *  *  #  .  *  *  *  #  *  .  *
```