PROBLEM F **HEX SEARCH** **10 POINTS**

For a word search (also known as a word find), you must find all the words from a list in a 2-dimensional grid. Some word searches have an extra twist; letters left over will spell out an answer to a clue.

Mrs Robinson decided to use this idea with her computing class after teaching them how hexadecimal works. Hexadecimal is a number system where there are 16 different digits (base 16). As a digit can only occupy one position, the letters from A to F (uppercase) are used to represent decimal 10 to 15.

Input

Input will consist of a positive integer N, between 2 and 10 inclusive, representing the dimensions of a 2D grid.

There will follow N lines of N characters, each consisting of numbers, letters (see preamble) or one of the following . ? ! * Each character is space separated.

Output

Output will consist of a number of lines. The first is all the non-hexadecimal characters in the grid, if any, in the same order as they appear in the input. There will then follow the decimal equivalents of the hexadecimal numbers, also in the same order as they appear in the input. These are delimited by either a non-hexadecimal character, or the end of a line.

Sample input 1	**Sample Output 1**
3	GO!
A 2 G	162
0 F A	250
5 9 !	89

Explanation:

The only non-hexadecimal character in the first row is “G”. Similarly in the 2nd row, it’s an “O” and finally in the 3rd row an “!”.

That leaves A2 on the first line, FA on the second line and 59 on the last line.

A2 = A * 16 + 2 = 10 *16 + 2 = 162

FA = 15 * 16 + 10 = 250

59 = 5 * 16 + 9 = 89

Continued

Sample input 2

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4
1 1 1 1
0 1 0 1
H A I .
Y O U !
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Sample Output 2

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HI.YOU!
4369
257
10
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Explanation:

1111 = 1 * 16^3 + 1 * 16^2 + 1 * 16^1 + 1 = 4096 + 256 + 16 + 1 = 4369

0101 = 257

A = 10