26 Mountain words
18 points

Introduction

Given a word, let's draw a mountain to create a nice ASCII landscape view.

```
                        T
                    A   A   T
G R E A T  ====>    E   E   E   A   T
                    R   R   R   R   E   A   T
                    G   G   G   G   G   R   E   A   T
```
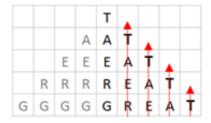
The whole word is printed vertically in the middle column, defining the mountain peak.

```
            T
        A   A   T
    E   E   E   A   T
    R   R   R   R   E   A   T
G   G   G   G   G   R   E   A   T
```

Then the left-hand side of the mountain is formed by vertical words that start at the base with the first letter of the word and go up vertically up to the diagonal.

```
            T
        A   A   T
    E   E   E   A   T
    R   R   R   R   E   A   T
G   G   G   G   G   R   E   A   T
```

Finally, for the right-hand side of the mountain the reverse principle applies, it's formed by vertical words starting at the base with the appropriate letter so that when going up vertically, they all end with the last letter of the word in the diagonal.

```
            T
        A   A   T
    E   E   E   A   T
    R   R   R   R   E   A   T
G   G   G   G   G   R   E   A   T
```

Input

Each line will contain one upper case word up to 12 characters long. The last line of the input contains a single #.

Output

Print the corresponding mountains, one after the other, for given words.

Example 1

Input

HAT
GREAT
FOUR
#

Output

```
            T
          AAT          R
  T       EEEAT        UUR
 AAT     RRRREAT     OOOUR
HHHAT  GGGGGREAT  FFFFOUR
```

Example 2

Input

A
#

Output

A