Surfing a tree   P64456_en

Write a program that reads a non empty binary tree of words, places at the root of the tree, and then moves in the tree followings the orders that is given.

Input

Input starts with the description of a non empty tree as is explained at the exercise **REREC**. Afterwards, a sequence of words that can be `"up"`, `"left"` or `"right"` comes.

Output

Your program must print the content of the initial position, and of the position after each step. The order that would cause to go out of the tree must be ignored, but writing the content of the position.

Sample input 1

```
10
betty and bob -1 brought -1 -1 back -1 -1 blue
balloons -1 -1 from the -1 bazaar -1 -1 -1

left
right
left
up
up
up
right
right
right
left
right
left
```

Sample output 1

```
betty
and
back
back
and
betty
betty
blue
from
from
the
bazaar
bazaar
```

Problem information

Author: Salvador Roura
Translator: Carlos Molina

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