The Meaning of Dictionary

Problem ID: a14p01themeaningofdictionary

Dr. Siggi is an eccentric professor at a university in Iceland, and he fancies himself a bit of a wordsmith. Since 1964 he has been maintaining on his old mainframe a dictionary that includes some words of his own making, in addition to the wide-spread vocabulary. However, the unthinkable has happened; his mainframe has stopped working, and he is at risk of forgetting the meaning of all his made up words, unless his dictionary can be salvaged and preserved for posterity. Dr. Siggi has utilized his immense influence within the Icelandic academic sphere to assemble the best problem solvers in Icelandic academia, and now, you are here. Here are your instructions from Siggi.

Write a program that uses a Python dictionary to implement a dictionary. The program repeatedly reads in a pair of inputs containing a word and its meaning, and stores the definition of the word into the dictionary as a key-value pair. Note: if the word is already in the dictionary, the old value should be overwritten. After every word-definition pair, the program recives an input indicating whether there are more pairs forthcoming. If the input is not `n` the process is repeated until it gets the input `n` after an insertion. Finally, the program should display the words in the dictionary in alphabetical order, along with the corresponding definitions of each.

Input

The lines in the input will come in threes, where in each block of three lines, the first line will contain a word, the second line will contain its meaning, and the third indicates whether there is more to come.

Formally, the input will consist of a sequence $l = (l_1, \ldots, l_{3n})$ of $3n$ lines. For each i with $1 \leq i \leq n$, line l_{3i-2} will contain a word w_i, line l_{3i-1} will contain its associated definition d_i, and line l_{3i} will contain a response r_i indicating whether this is the last block or not. So line l_{3n} will consist of the single letter `n`, but for any $i < n$, line l_{3i} will contain something different.

In the tests, n will be restricted to $n \leq 30$. All lines will contain only letters from the English alphabet, as well as punctuation, spaces and possibly some numbers. And for all $i \in \{1, \ldots, n\}$, the response r_i will be either `y` or `n`. In particular, r_n will be `n` and for all $i < n$, the response r_i will be `y`.

Output

The output should display, in alphabetical order, the words from the input, each followed by the last given definition for that word, on a separate line, and indented by 4 spaces. There should be a blank line preceding each word, to separate the pairs.

Formally, the output should consist of a sequence $\lambda = (\lambda_1, \ldots, \lambda_{3m})$ of $3m$ lines, where m is the number of *different* words in the input. So $1 \leq m \leq n$.

Let $s = (s_1, \ldots, s_m)$ be a sequence of the distinct words in the set $\{w_1, \ldots, w_n\}$, sorted in alphabetical order. For each i with $1 \leq i \leq m$, line λ_{3i-2} should be blank, line λ_{3i-1} should contain the word s_i, and line λ_{3i} should start wit 4 spaces, followed by the definition of the word s_i that was given the last time the word s_i appeared in the input. To be precise, let $j = \max\{k \mid w_k = s_i\}$. Then line λ_{3i} should contain the definition d_j, preceded by 4 spaces.

Sample Input 1

```
Hello
an expression or gesture of greeting.
y
World
the earth with its inhabitants and all things upon it.
n
```

Sample Output 1

```

Hello:
    an expression or gesture of greeting.

World:
    the earth with its inhabitants and all things upon it.
```

Sample Input 2

```
liff
A book, the contents of which are totally belied by its cover.
n
```

Sample Output 2

```
liff:
    A book, the contents of which are totally belied by its cover.
```

Sample Input 3

```
RU
Reykjavík University
y
HÍ
Háskóli Íslands
n
```

Sample Output 3

```
HÍ:
    Háskóli Íslands

RU:
    Reykjavík University
```

Sample Input 4

```
dictionary
a resource that lists the words of a language and gives their meaning.
y
dictionary
a Python container that stores mappings of unique keys to values.
y
orthography
the conventional spelling system of a language.
y
somnolence
sleepiness; drowsiness.
y
diffract
to break up into segments or portions.
y
wordish
verbose.
y
tetrachromatic
concerning theory that there are four primary colours.
y
markhor
reddish-grey central Asian wild goat.
n
```

Sample Output 4

```
dictionary:
    a Python container that stores mappings of unique keys to values.

diffract:
    to break up into segments or portions.

markhor:
    reddish-grey central Asian wild goat.

orthography:
    the conventional spelling system of a language.

somnolence:
    sleepiness; drowsiness.

tetrachromatic:
    concerning theory that there are four primary colours.

wordish:
    verbose.
```