Compatible words X12617_en

Given a non-negative integer d, we say that two words are *d-compatible* if they are of the same lenght and their Hamming distance is less than or equal to d. The Hamming distance between two words of equal lenght is the number of positions at which the corresponding symbols are different. For example:

- The distance between ”tener” and ”poner” is 2.
- The distance between ”tener” and ”reses” is 3.
- The distance between ”tener” and ”poeta” is 5.

Given a non-negative integer d and two string sequences P and S, you have to write a program such that, for each string in S, writes its first d-compatible string in P.
You **MUST** complete and use the following code:

```
// Pre: two lower-case words; a non-negative integer d
// Post: it returns true if the two words are d-compatible, false otherwise
... d_compatible(...) {
    ...
}

// Pre: a vector v of lower-case words; a lower-case word w; a non-negative int
// Post: it returns the first word in v which is d-compatible with w, "--" othe
... compatible_word(...) {
    ...
}
```

Exam score: 4.5 **Automatic part:** 40%

Input

The input starts with a non-negative integer d. Then, it follows a non-negative integer p and a sequence P of p lower-case words. Finally, the input ends with a sequence S of lower-case words followed by the mark ”STOP” indicating its end.

Output

For each word in the sequence S, the program writes the first word in the sequence P which is d-compatible with it (if that word exists) or ”--” otherwise. See the examples below.

Sample input 1

```
0
3 mesa casa libro
mesa posa pesa pasa casa STOP
```

Sample output 1

```
mesa: mesa
posa: --
pesa: --
pasa: --
casa: casa
```

Sample input 2

```
1
3 mesa casa libro
mesa posa pesa pasa casa STOP
```

Sample output 2

```
mesa: mesa
posa: --
pesa: mesa
pasa: casa
casa: casa
```

Sample input 3

```
2
3 mesa casa libro
mesa posa pesa pasa casa STOP
```

Sample output 3

```
mesa: mesa
posa: mesa
pesa: mesa
pasa: mesa
casa: mesa
```

Sample input 4

```
1
0
mesa edificio barandilla STOP
```

Sample output 4

```
mesa: --
edificio: --
barandilla: --
```

Sample input 5

```
2
3 casa stop hoy
STOP
```

Sample output 5

Sample input 6

```
10
3 casa apuntes luz
casas apunto tino STOP
```

Sample output 6

```
casas: --
apunto: --
tino: casa
```

Problem information

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