

Problem 2 – Weird Script

After exploring all of Outland, the next adventure that awaits you is Northrend. It is a long-forgotten land holding many secrets about the ancients. The wizards of Dalaran moved there, too. They've found an ancient tablet, but they cannot decipher it.

You quickly notice that there is a key in the tablet – a number that corresponds to an English letter. The mapping is quite simple **1-26** are lowercase **a-z**, **27-52** are uppercase **A-Z**, **53-78** are **a-z** again, **79-104** are **A-Z**, and so on ... The first task is to find the **key letter**. Next, construct the key – it is done by joining two letters together. For instance, if the key letter is **B**, the key is **BB**. The second task is to find all strings that are located between two keys. For instance, in the string `asdadBBdoomiscomingBBasda`, the string to search for is **doomiscoming**. Find all strings located between two keys and print them to the console, **each** on a **new line**.

Do not print empty strings!

Input

- On the first line you are given a number **N** – the key number
- Until the command “**End**” is reached, you are given a series of strings, each on a new line.

Output

- Print each string found on a **new line**.

Constraints

- The number of strings is in range [2 ... 100]
- Each string length is in range [1 ... 100] and can contain any ASCII character.
- A string between two keys has length in range [0 .. 50]
- N is in range [1 ... $2^{31} - 1$]
- Allowed memory: 16MB
- Allowed working time: 0.25s

Examples

Input	Output	Comments
14 ajhdnnTremble,nn nnmortals,nnand87 12783nnand despair!nn End	Tremble, mortals, and despair!	14 is lowercase n. The key is nn. We extract all the strings between two keys and print them to the console.

Input	Output	Comments
79 AAthat'sAAAA One big string !AA End	that's One big string !	79 is A. The key is AA.