

Problem 1 - Hogwarts

Welcome, wizard. We have been waiting for you here, in Hogwarts. Get ready to learn a lot of new potions and spells to fight The one who shall not be named. Your first class is Spellcasting.

First, you will receive a **spell that needs to be deciphered**. Next, you will be receiving **commands** split by a single space until you get the "**Abracadabra**" command. There are **5 possible commands**:

- **"Abjuration"**
 - **Replace** all letters with **upper case** and **print** the result.
- **"Necromancy"**
 - **Replace** all letters with **lower case** and **print** the result.
- **"Illusion {index} {letter}"**
 - **Replace** the letter at the index with the given one and print **"Done!"**
 - If the index is **invalid**, print: **"The spell was too weak."**
- **"Divination {first substring} {second substring}"**
 - **Replace** the **first substring (all matches)** with the **second** and **print the result**.
 - If the substring **does not exist**, **skip** the command.
- **"Alteration {substring}"**
 - **Remove** the **substring from the string** and **print the result**.
 - If the substring **does not exist**, **skip** the command.

If the input command is **not** in the list, print **"The spell did not work!"**.

Input / Constraints

- On the **1st line**, you are going to receive the **string**.
- On the next **lines**, until you receive "**Abracadabra**", you will be receiving commands.
- All commands are **case-sensitive**.

Output

- **Print** the **output** of the **commands** in the **format described above**.

Examples

Input	Output
A7ci0 Illusion 1 c Illusion 4 o Abjuration Abracadabra	Done! Done! ACCIO
TR1GG3R Necromancy Illusion 8 m Illusion 9 n Abracadabra	tr1gg3r The spell was too weak. The spell was too weak.
SwordMaster Target Target Target Abjuration Necromancy Alteration master Abracadabra	The spell did not work! SWORDMASTER swordmaster sword

JS Examples

Input	Output
(["A7ci0", "Illusion 1 c", "Illusion 4 o", "Abjuration", "Abracadabra"])	Done! Done! ACCIO
(["TR1GG3R", "Necromancy", "Illusion 8 m", "Illusion 9 n", "Abracadabra"])	tr1gg3r The spell was too weak. The spell was too weak.
(["SwordMaster", "Target Target Target", "Abjuration", "Necromancy", "Alteration master", "Abracadabra"])	The spell did not work! SWORDMASTER swordmaster sword