

## Problem 02. Song Encryption

*Now that you've helped Mandy to accept the group applications it's time to assist her with a security problem. You are tasked to encrypt all songs from the set list so that if someone steals it they won't be able to leak it online.*

Your task is to write a program that encrypts information about artists and their songs.

Until you receive the command **"end"** you should read lines in following format :"**{artist}:{song}**", and check if it's **valid**, considering the following rules:

- **Artist** – starts with **capital letter**, followed by **lowercase letters**.
  - It can also **contains apostrophe ( ' )**, and **whitespace " "**;  
**Valid group name:** Red hot chili peppers, Eminem, Guns n' roses  
**Invalid group name:** ReD Hot CiLly PePers, sLipKnot, guns n'roses
- **Song** – contains **only capital letters, and whitespaces**.  
**Valid songs:** BACK IN BLACK, BLEED IT OUT, KILLSHOT  
**Invalid songs:** #BaCk IN black, BLEED \$IT\$ OUTt, &KILLSHoT

After you validate the lines of an input, you should encrypt the information. In order to do that, you have to follow the rules below:

- **First you need to find a key for encryption.**
  - Your key is the **length of the artist (e.g. "Eminem" – key: 6)**
- You have to **increment the ASCII value** of each symbol of the input, with the **key length** (e.g. "char" 'a' -> 'g')
  - Be careful if your key length is **bigger** than the ASCII value of a letter 'z' or 'Z'. In this case you should start from a letter 'a'. (e.g. key:6 letter – 'x', encrypted letter – 'd')
- You should **NOT ENCRYPT** the following characters: **whitespaces**, and **apostrophes**
- You also should **replace ':'** with the sign **'@'**

## Input / Constraints

Until you receive **"end"** command you should read from the console.

- **Line of input** – Artist name and song, **separated by ":"**, containing only **ASCII symbols**.
- Allowed working time for your program: 0.1 seconds.
- Allowed memory: 16 MB.

## Output

After every line of input, you should print:

- If line is valid – **encrypted information** in following format:  
**"Successful encryption: {encryptedArtist}@{encryptedSong}"**.
- If line is not valid – print the following message: **"Invalid input!"**

## Examples

Input	Output	Comments
Eminem:VENOM Linkin park:NUMB Drake:NONSTOP Adele:HELLO end	Successful encryption: Ksotks@BKTUS Successful encryption: Wtyvty alcv@YFXM Successful encryption: Iwfpj@STSXYTU Successful encryption: Fijqj@MJQQT	All lines of input <b>are valid</b> , so we encrypt the information, change the character ":" with the sign "@", and print the output of encryption. <i>Example: Eminem-&gt; key 6</i> , adding a key to the ASCII value of each character except the <b>whitespace</b> , <b>apostrophe</b> , and our <b>delimiter(":")</b> and receive an encrypted name – <b>Ksotks@BKTUS</b> , then we do the same with the song.
Input	Output	Comments
Michael Jackson:ANOTHER PART OF ME Adele:ONE AND ONLY Guns n'roses:NOVEMBER RAIN Christina Aguilera: HuRt end	Invalid input! Successful encryption: Fijqj@TSJ FSI TSQD Successful encryption: Sgze z'daeqe@ZAHQYNQD DMUZ Invalid input!	First line is not valid, because in the name of Michael Jackson we have more than one capital letter. Next two are valid, and the last is not valid, because the song does not contain only capital letters.