# Programming Fundamentals Final Exam Retake 10.04.2020

## Problem 1. Secret Chat

*You have plenty of free time, so you decide to write a program that conceals and reveals your received messages. Go ahead and type it in!*

On the first line of the input you will receive the **concealed message**. After that, until the "Reveal" command is given, **you will be receiving strings** with **instructions** for different **operations** that need to be performed upon the **concealed message** in order to **interpret** **it** and reveal its true content. There are several types of instructions, split by ":|:"

* InsertSpace:|:{index}
  + Inserts a single **empty space** **at the given index**. The given index will always be valid.
* Reverse:|:{substring}
  + If the message contains the given **substring**, **cut it out**, **reverse** it and **add** it at the **end** of the message.
  + If not, print "error".
  + This operation should replace only the first occurrence of the given **substring** **if there are more than one such occurrences**.
* ChangeAll:|:{substring}:|:{replacement}
  + Changes all occurrences of the given substring with the replacement text.

### Input / Constraints

* On the first line, you will receive a string with message.
* On the next lines, you will be receiving commands, split by **":|:"**.

### Output

* After each set of instructions, print the resulting string.
* After the "Reveal" command is received, print this message:  
  "**You have a new text message: {message}**"

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| heVVodar!gniV  ChangeAll:|:V:|:l  Reverse:|:!gnil  InsertSpace:|:5  Reveal  heVVodar!gniV!gniV  ChangeAll:|:V:|:l  Reverse:|:!gnil  InsertSpace:|:5  Reveal | hellodar!gnil  hellodarling!  hello darling!  You have a new text message: hello darling! |
| **Comments** | |
| **ChangeAll:|:V:|:l** heVVodar!gniV -> hellodar!gnil (We replace all occurrences of "V" with "l")  **Reverse:|:!gnil**  hellodar!gnil -> !gnil -> ling! -> hellodarling! (We reverse !gnil to ling! And put it in the end of the string)  **InsertSpace:|:5**  hellodarling! -> hello.darling! (We insert a space at index 5)  Finally, after receiving the **"Reveal"** command, we print the resulting message. | |
| **Input** | **Output** |
| Hiware?uiy  ChangeAll:|:i:|:o  Reverse:|:?uoy  Reverse:|:jd  InsertSpace:|:3  InsertSpace:|:7  Reveal | Howare?uoy  Howareyou?  error  How areyou?  How are you?  You have a new text message: How are you? |

### JS Input / Output

|  |  |
| --- | --- |
| **Input** | **Output** |
| [  'heVVodar!gniV',  'ChangeAll:|:V:|:l',  'Reverse:|:!gnil',  'InsertSpace:|:5',  'Reveal'  ] | hellodar!gnil  hellodarling!  hello darling!  You have a new text message: hello darling! |
| **Comments** | |
| **ChangeAll:|:V:|:l** heVVodar!gniV -> hellodar!gnil (We replace all occurrences of "V" with "l")  **Reverse:|:!gnil**  hellodar!gnil -> !gnil -> ling! -> hellodarling! (We reverse !gnil to ling! And put it in the end of the string)  **InsertSpace:|:5**  hellodarling! -> hello.darling! (We insert a space at index 5)  Finally, after receiving the **"Reveal"** command, we print the resulting message. | |
| **Input** | **Output** |
| [  'Hiware?uiy',  'ChangeAll:|:i:|:o',  'Reverse:|:?uoy',  'Reverse:|:jd',  'InsertSpace:|:3',  'InsertSpace:|:7',  'Reveal'  ] | Howare?uoy  Howareyou?  error  How areyou?  How are you?  You have a new text message: How are you? |