# Programming Fundamentals Final Exam Retake 15.08.2020

## Problem 1. The Imitation Game

*You are a mathematician during world war 2, who has joined the cryptography team to decipher the enemy's enigma code. Your job is to create a program to crack the codes.*

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

* Move {number of letters}
  + Moves the first n letters to the back of the string.
* Insert {index} {value}
  + Inserts the given value before the given index in the string.
* 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 the "Decode" command is received, print this message:  
  "**The decrypted message is: {message}**"

### Examples

|  |  |
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| **Input** | **Output** |
| zzHe  ChangeAll|z|l  Insert|2|o  Move|3  Decode | The decrypted message is: Hello |
| **Comments** | |
| **ChangeAll|z|l**  zzHe → llHe (We replace all occurrences of 'z' with 'l')  **Insert|2|o**  llHe → lloHe (We add an 'o' before the character on index 2)  Move|3  lloHe → Hello (We take the first three characters and move them to the end of the string)  Finally, after receiving the **"Decode"** command, we print the resulting message. | |
| **Input** | **Output** |
| owyouh  Move|2  Move|3  Insert|3|are  Insert|9|?  Decode | The decrypted message is: howareyou? |

|  |  |
| --- | --- |
| **JavaScript Input** | **Output** |
| [  'zzHe',  'ChangeAll|z|l',  'Insert|2|o',  'Move|3',  'Decode'  ] | The decrypted message is: Hello |
| **Comments** | |
| **ChangeAll|z|l**  zzHe → llHe (We replace all occurrences of 'z' with 'l')  **Insert|2|o**  llHe → lloHe (We add an 'o' before the character on index 2)  Move|3  lloHe → Hello (We take the first three characters and move them to the end of the string)  Finally, after receiving the **"Decode"** command, we print the resulting message. | |
| **JavaScript Input** | **Output** |
| [  'owyouh',  'Move|2',  'Move|3',  'Insert|3|are',  'Insert|9|?',  'Decode'  ] | The decrypted message is: howareyou? |