# Problem 1 - Password Validator



Create a program that manipulates a string and makes it suitable for a password.

**Password rules** are:

* Must be **at least 8 characters long**
* Consists **only** of letters, digits, and underscore - "**\_**"
* Must have at least **one uppercase letter**
* Must have at least **one lowercase letter**
* Must have at least **one digit**

First, you are going to **receive** **the password** that the user wants to use.

Next, you will be receiving **commands** until you receive the "**Complete**" command. There are **five** possible commands:

* **"Make Upper {index}"**
  + **Replace** the letter at the given index with upper case, then **print** the password.
* **"Make Lower {index}"**
  + **Replace** the letter at the given index with lower case, then **print** the password.
* "Insert {index} {char}**"**
  + Inserts the given **char** **at the given index** in the string, then **print** the password.
  + If the **index** is **not valid**, **ignore** the command.
* "**Replace {char} {value}"**
  + **Get** the **ASCII** value of the given char. **Sum** **its value** with the given **value and replace all occurrences** of the **char** with **the new symbol** corresponding to the **sum result** in the **ASCII table. Print** the password.
  + If the **char** is **not in the password**, **ignore** the command.
* "**Validation"**
  + Check **why** **the password is not valid.** Each of the checks should be **performed in the order shown** and **are independent of each other**:

1. If it is not at least 8 characters, print: **"Password must be at least 8 characters long!"**
2. If it does not consist only of letters, digits and underscore, print: **"Password must consist only of letters, digits and \_!"**
3. If it does not have at least one uppercase letter, print: **"Password must consist at least one uppercase letter!"**
4. If it does not have at least one lowercase letter, print: **"Password must consist at least one lowercase letter!"**
5. If it does not have at least one digit, print: **"Password must consist at least one digit!"**

**If a given command is not valid, you should ignore it.**

## Input

* On the **1st line,** you are going to receive the **password in the form of a string**.
* On the next **lines**, until you receive the **"Complete"** command, you will be receiving commands.

## Output

* **Print** the **output** of every **command** in the **format** **described** **above**.

## Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| invalidpassword\*  Add 2 p  Replace i -50  Replace \* 10  Make Upper 2  Validation  Complete | 7nval7dpassword\*  7nval7dpassword4  7nVal7dpassword4 |
| 123456789  Insert 3 R  Replace 5 15  Validation  Make Lower 3  Complete | 123R456789  123R4D6789  Password must consist at least one lowercase letter!  123r4D6789 |