# School Library

*As a young developer Iskren is a part from software development school team. His task is to do online book library, but he needs your help for that.*

On the first line you will receive a String, representing shelf with books in library. Every book is separated with "**&**".

On the next lines until you receive "**Done**" command, you will receive following commands:

* **Add Book | {book name}**
* **Add** a book at **first place** in the shelf.
* If the book **already is present** on the shelf, **ignore the command**.
* **Take Book | {book name}**
* **Remove** the book with the given name only **if the book is on the shelf**, otherwise **ignore this command**.
* **Swap Books | {book1} | {book2}**
* If both books **are on the shelf**, swap their places.
* **Insert Book | {book name}**
* **Add** a book at the **end of the book collection**.
* **Check Book | {index}**
* **Print** the name of the book on the given index the book.
* If the index is **invalid**, **ignore the command**.

## Input

* **On the 1st line**, you will receive a string, representing book names, separated with "**&**".
* On the **next lines**, until you receive "**Done**", you will receive **commands** in the **format described** above.

## Output

* Print the **collection** of books joined by **", ".**

**"{firstBook}, {secondBook}, …{lastBook}"**

## Constraints

* You won't receive duplicate book names in the initial list of books.

## Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| Don Quixote&The Great Gatsby&Moby Dick&Hamlet  Add Book | The Odyssey  Take Book | Don Quixote  Insert Book | Alice's Adventures in Wonderland  Check Book | 3  Done | Hamlet  The Odyssey, The Great Gatsby, Moby Dick, Hamlet, Alice's Adventures in Wonderland |
| **Input** | **Output** |
| Anna Karenina&Heart of Darkness&Catch-22& The Stranger  Add Book | David Copperfield  Add Book | One Thousand and One Nights  Swap Books | One Thousand and One Nights | Catch-22  Take Book | David Copperfield  Insert Book | The Stories of Anton Chekhov  Check Book | 17  Done | Catch-22, Anna Karenina, Heart of Darkness, One Thousand and One Nights, The Stranger, The Stories of Anton Chekhov |