# Problem 2 - Book's World



*In Bulgaria, every year, the books' publishers organize festivals, where books are in half price. Theirgoalis to popularize read among young people and children.*

A publisher asks you to write a program to see if people's favorite genre has changed to find out if readers' tastes are changing.

On the **first line**, you will receive the **old most favorite genres**, separatedby "**| "**.

On the **next lines, until you receive "Stop!"**, you will be receiving **commands**.The **supported commands are:**

* **"Join {genre}":**
  + If the genre **is not** in the collection, **add it at the end** of the sequence.
  + Otherwise, ignore the command.
* **"Drop {genre}":**
  + If the genre **is in the collection**, **remove it** from the sequence.
  + Otherwise, ignore the command.
* **"Replace {old genre} {new genre}":**
  + If the **old genreis in the collection and the new genre is not**, **replacethe old genre**with the new one.
  + Otherwise, ignore the command.
* **"Prefer {genreIndex1} {genreIndex2}"**:
  + **Ifbothgenre indexesexist** in your list, take the two genres and **changetheir places**.
  + Otherwise, **skip** the command.

You should**print** the names of**the favorite genres in the final collection**on a single line, separated by **space**.

For more clarification, see the examples below.

### Input / Constraints

* On the **first line,**you will receive the old genres, separated by "**| "**–string.
* On the**following lines**, until the command **"Stop!"**, you will be receiving commands.
* All the commands will be valid.

### Output

* Print the names of **the favorite genres in the final collection** on a single line, separated by **space.**

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| Romance | Fiction | Horror | Mystery Drop Romance Join Fantasy  Prefer 1 2 Stop! | Fiction Mystery Horror Fantasy |
| Poetry | Romance Drop Children Replace Fantasy Crime Stop! | Poetry Romance |
| Thriller | Young | Crime Join Political Replace Young Fairytale  Prefer 6 2 Stop! | Thriller Fairytale Crime Political |