

Problem 2 - Coffee Lover



John is a lover of expensive and luxurious coffees.

Create a program that helps John keep track of the coffee he has. You will receive a list of the coffees that John has in stock, on a single line separated by a single space in the following format:

"{coffee1} {coffee2} {coffee3} ... {coffeeNn}".

Then you will receive a number – **n** – a count of commands you need to execute over your list. There are four possible commands:

- **"Include {coffee}"**:
 - Add the coffee at the end of your list.
- **"Remove {first/last} {numberOfCoffees}"**:
 - Depending on the input, remove either the "first" or the "last" number of coffees from your list.
 - If you have fewer coffees in your list than the given number, skip this command.
- **"Prefer {coffeeIndex₁} {coffeeIndex₂}"**:
 - If both coffee indexes exist in your list, take the two coffees and change their places.
 - Otherwise, skip the command.
- **"Reverse"**:
 - Reverse the order of the coffees.

In the end, print the manipulated list in the following format:

"Coffees:

{coffee₁} {coffee₂} ... {coffeeNn}"

Input / Constraints

- On the 1st line, you will receive the starting list with the names of the coffees separated by a " " (empty space).
- On the 2nd line, you will receive the number of commands - **n** – an integer in the range [1...100].
- On the following **n** lines, you will be receiving commands in the format described above.

Output

- Print the list after the manipulations in the format described above.

Examples

Input	Output
Arabica Liberica Charrieriana Magnistipula Robusta BulkCoffee StrongCoffee	Coffees: StrongCoffee Magnistipula Robusta BulkCoffe Charrieriana

5 Include TurkishCoffee Remove first 2 Remove last 1 Prefer 3 1 Reverse	
Comments	
<p>First, we receive the "Include" and the name of the coffee: we add the coffee to our list. The collection should look like this: Arabica Liberica Charrieriana Magnistipula Robusta BulkCoffee StrongCoffee TurkishCoffee</p> <p>Next, we receive the "Remove" command and the keyword "first": we take the first 2 coffees and remove them. The collection should look like this: Charrieriana Magnistipula Robusta BulkCoffee StrongCoffee TurkishCoffee.</p> <p>After that, we receive the "Remove" command and the keyword "last": we remove the last 1 coffee. The collection should look like this: Charrieriana Magnistipula Robusta BulkCoffee StrongCoffee.</p> <p>Next, we receive the "Prefer" command: we find the coffee at index 3 and replace it with the coffee at index 1. The collection should look like this: Charrieriana BulkCoffee Robusta Magnistipula StrongCoffee.</p> <p>At last, we receive the "Reverse" command: we make a reverse list. Our final collection looks like this: StrongCoffee Magnistipula Robusta BulkCoffee Charrieriana.</p>	
Arabica Robusta BulkCoffee StrongCoffee TurkishCoffee 5 Include OrdinaryCoffee Remove first 1 Prefer 0 1 Prefer 3 1 Reverse	Coffees: OrdinaryCoffee Robusta StrongCoffee TurkishCoffee BulkCoffee
Robusta StrongCoffee BulkCoffee TurkishCoffee Arabica 3 Include OrdinaryCoffee	Coffees: StrongCoffee OrdinaryCoffee TurkishCoffee Arabica BulkCoffee

Remove first 1	
Prefer 4 1	

JS Examples

The input will be provided as an array of strings.

Input	Output
<pre>(["Arabica Liberica Charrieriana Magnistipula Robusta BulkCoffee StrongCoffee", "5", "Include TurkishCoffee", "Remove first 2", "Remove last 1", "Prefer 3 1", "Reverse"])</pre>	<pre>Coffees: StrongCoffee Magnistipula Robusta BulkCoffe Charrieriana</pre>
Comments	
<p>First, we receive the "Include" and the name of the coffee: we add the coffee to our list. The collection should look like this: Arabica Liberica Charrieriana Magnistipula Robusta BulkCoffee StrongCoffee TurkishCoffee</p> <p>Next, we receive the "Remove" command and the keyword "first": we take the first 2 coffees and remove them. The collection should look like this: Charrieriana Magnistipula Robusta BulkCoffee StrongCoffee TurkishCoffee.</p> <p>After that, we receive the "Remove" command and the keyword "last": we remove the last 1 coffee. The collection should look like this: Charrieriana Magnistipula Robusta BulkCoffee StrongCoffee.</p> <p>Next, we receive the "Prefer" command: we find the coffee at index 3 and replace it with the coffee at index 1. The collection should look like this: Charrieriana BulkCoffee Robusta Magnistipula StrongCoffee.</p> <p>At last, we receive the "Reverse" command: we make a reverse list. Our final collection looks like this: StrongCoffee Magnistipula Robusta BulkCoffe Charrieriana.</p>	

<pre>(["Arabica Robusta BulkCoffee StrongCoffee TurkishCoffee", "5", "Include OrdinaryCoffee", "Remove first 1", "Prefer 0 1", "Prefer 3 1", "Reverse"])</pre>	<p>Coffees:</p> <p>OrdinaryCoffee Robusta StrongCoffee TurkishCoffee BulkCoffee</p>
<pre>(["Robusta StrongCoffee BulkCoffee TurkishCoffee Arabica", "3", "Include OrdinaryCoffee", "Remove first 1", "Prefer 4 1"])</pre>	<p>Coffees:</p> <p>StrongCoffee OrdinaryCoffee TurkishCoffee Arabica BulkCoffee</p>