Problem 3. Wizard Poker

The world is threatened by an enemy never seen before. Your hero's weapon seems to be useless against the enemy. But your hero has a super strong arsenal full of powerful magic cards and will challenge the enemy to a card duel to the death and he needs your help to create a deck.

Create a program that **adds**, **inserts**, **removes** and **swaps** cards in a new **deck**. On the first line, you will receive all cards in the form of strings **separated** by **":"**. Until you receive the **"Ready"** command, you will get commands in the format:

- **Add {card name}**
    - Adds the card to the **end** of the **deck**.
    - If the card **doesn't exist** in print **"Card not found."**

- **Insert {card name} {index}**
    - Insert the card at the **given** index of the **deck.**
    - If the card **doesn't exist** or the index is invalid print **"Error!"**

- **Remove {card name}**
    - Remove the card from the **deck**.
    - If the card **doesn't exist** in print **"Card not found."**

- **Swap {card name 1} {card name 2}**
    - **Swap** the **positions** of the cards.
    - Input will **always be valid**

- **Shuffle deck**
    - Reverse the **deck**

When you receive the "**Ready**" command print the cards in the deck **separated by space**.

Input

- **On the 1st line,** you will receive the arsenal of all cards available separated by **":"**.
- **On the next lines,** until you receive the **"Ready" command** you will receive commands to arrange your deck.

Output

- Print the cards in your deck on a single line, separated by a single space.

Examples

Input	Output

Innervate:Moonfire:Pounce:Claw:Wrath:Bite	Wrath Pounce Claw Moonfire
Add Moonfire	
Add Pounce	
Add Bite	
Add Wrath	
Insert Claw 0	
Swap Claw Moonfire	
Remove Bite	
Shuffle deck	
Ready	

Comments

First command is Add Moofire and now our deck has one card in it.
1. Moonfire Pounce
2. Moonfire Pounce Bite
3. Moonfire Pounce Bite Wrath
4. Claw Moonfire Pounce Bite Wrath
5. Moonfire Claw Pounce Bite Wrath
6. Moonfire Claw Pounce Wrath
7. Wrath Pounce Claw Moonfire

Wrath:Pounce:Lifeweaver:Exodia:Aso:Pop	Card not found.
Add Pop	Card not found.
Add Exodia	Error!
Add Aso	Aso Exodia Pop
Remove Wrath	
Add SineokBqlDrakon	
Shuffle deck	
Insert Pesho 0	
Ready	