

Problem 3 - Deck of Cards



You will receive a list of Cards on a single line separated by ", ". On the next line, you will receive a number n . On the next n lines, you will receive commands that could be:

- **"Add, {CardName}":**
 - Add the given card to the card deck and print: **"Card successfully added"**
 - If it is already in the deck, print: **"Card is already in the deck"**
- **"Remove, {CardName}":**
 - Remove the given card from the card deck and print: **"Card successfully removed"**
 - If it is not in the deck, print: **"Card not found"**
- **"Remove At, {index}":**
 - Remove the card at the given index and print: **"Card successfully removed"**
 - If the index is not in the range of the list, print: **"Index out of range"**
- **"Insert, {index}, {CardName}":**
 - Add the card at the given index and print: **"Card successfully added"**
 - If the index is out of range, print: **"Index out of range"**
 - If the index is in range, but the card is already in the deck, print: **"Card is already added"**

Input

- The first input line will contain the list of cards.
- The second input will be the number of commands – an integer number in the range $[0...50]$.
- On the following input lines, you will be receiving commands.

Output

- After going through all the commands, you need to print all cards on a single line separated by ", ".

Examples

Input	Output
Ace of Diamonds, Queen of Hearts, King of Clubs 3 Add, King of Diamonds Insert, 2, Jack of Spades Remove, Ace of Diamonds	Card successfully added Card successfully added Card successfully removed Queen of Hearts, Jack of Spades, King of Clubs, King of Diamonds
Two of Clubs, King of Spades, Five of Spades, Jack of Hearts 2 Add, Two of Clubs Remove, Five of Hearts	Card is already in the deck Card not found Two of Clubs, King of Spades, Five of Spades, Jack of Hearts

Jack of Spades, Ace of Clubs, Jack of Clubs 2 Insert, -1, Queen of Spades Remove At, 1	Index out of range Card successfully removed Jack of Spades, Jack of Clubs
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JS Examples

The input will be provided as an array of strings.

Input	Output
(["Ace of Diamonds, Queen of Hearts, King of Clubs", "3", "Add, King of Diamonds", "Insert, 2, Jack of Spades", "Remove, Ace of Diamonds"])	Card successfully added Card successfully added Card successfully removed Queen of Hearts, Jack of Spades, King of Clubs, King of Diamonds
(["Two of Clubs, King of Spades, Five of Spades, Jack of Hearts", "2", "Add, Two of Clubs", "Remove, Five of Hearts"])	Card is already in the deck Card not found Two of Clubs, King of Spades, Five of Spades, Jack of Hearts
(["Jack of Spades, Ace of Clubs, Jack of Clubs", "2", "Insert, -1, Queen of Spades", "Remove At, 1"])	Index out of range Card successfully removed Jack of Spades, Jack of Clubs