Problem 3 - The Pianist

Problem for exam preparation for the Programming Fundamentals Course @SoftUni. Submit your solutions in the SoftUni judge system at https://judge.softuni.org/Contests/Practice/Index/2525#2.

You are a pianist, and you like to keep a list of your favorite piano pieces. Create a program to help you organize it and add, change, remove pieces from it!

On the first line of the standard input, you will receive an integer n – the number of pieces you will initially have. On the next **n** lines, the **pieces themselves** will follow with their **composer** and **key**, separated by "|" in the following format: "{piece}|{composer}|{key}".

Then, you will be receiving different commands, each on a new line, separated by "|", until the "Stop" command is given:

- "Add|{piece}|{composer}|{key}":
 - You need to add the given piece with the information about it to the other pieces and print:
 - "{piece} by {composer} in {key} added to the collection!"
 - o If the piece is already in the collection, print:
 - "{piece} is already in the collection!"
- "Remove|{piece}":
 - o If the piece is in the collection, **remove it** and print:
 - "Successfully removed {piece}!"
 - Otherwise, print:
 - "Invalid operation! {piece} does not exist in the collection."
- "ChangeKey|{piece}|{new key}":
 - If the piece is in the collection, **change its key with the given one** and print:
 - "Changed the key of {piece} to {new key}!"
 - Otherwise, print:
 - "Invalid operation! {piece} does not exist in the collection."

Upon receiving the "Stop" command, you need to print all pieces in your collection in the following format:

```
"{Piece} -> Composer: {composer}, Key: {key}"
```

Input/Constraints

- You will receive a single integer at first the initial number of pieces in the collection
- For each piece, you will receive a single line of text with information about it.
- Then you will receive multiple commands in the way described above until the command "Stop".

Output

All the output messages with the appropriate formats are described in the problem description.

Examples

Input	Output
3	Sonata No.2 by Chopin in B Minor added to
Fur Elise Beethoven A Minor	the collection!



© SoftUni – about.softuni.bg. Copyrighted document. Unauthorized copy, reproduction or use is not permitted.















Moonlight Sonata|Beethoven|C# Minor Clair de Lune | Debussy | C# Minor Add|Sonata No.2|Chopin|B Minor Add Hungarian Rhapsody No.2 | Liszt | C# Minor Add|Fur Elise|Beethoven|C# Minor Remove|Clair de Lune ChangeKey | Moonlight Sonata | C# Major Stop

Hungarian Rhapsody No.2 by Liszt in C# Minor added to the collection! Fur Elise is already in the collection! Successfully removed Clair de Lune! Changed the key of Moonlight Sonata to C# Major!

Fur Elise -> Composer: Beethoven, Key: A Minor

Moonlight Sonata -> Composer: Beethoven,

Key: C# Major

Sonata No.2 -> Composer: Chopin, Key: B

Minor

Hungarian Rhapsody No.2 -> Composer:

Liszt, Key: C# Minor

Comments

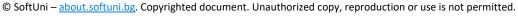
After we receive the initial pieces with their info, we start receiving commands. The first two commands are to add a piece to the collection, and since the pieces are not already added, we manage to add them. The third add command, however, attempts to add a piece, which is already in the collection, so we print a special message and don't add the piece. After that, we receive the remove command, and since the piece is in the collection, we remove it successfully.

Finally, the last command says to change the key of a piece. Since the key is present in the collection, we modify its key.

We receive the Stop command, print the information about the pieces, and the program ends.

Input	Output
4	Spring by Vivaldi in E Major added to the
Eine kleine Nachtmusik Mozart G Major	collection!
La Campanella Liszt G# Minor	Successfully removed The Marriage of
The Marriage of Figaro Mozart G Major	Figaro!
Hungarian Dance No.5 Brahms G Minor	Invalid operation! Turkish March does not
Add Spring Vivaldi E Major	exist in the collection.
Remove The Marriage of Figaro	Changed the key of Spring to C Major!
Remove Turkish March	Nocturne by Chopin in C# Minor added to
ChangeKey Spring C Major	the collection!
Add Nocturne Chopin C# Minor	Eine kleine Nachtmusik -> Composer:
Stop	Mozart, Key: G Major











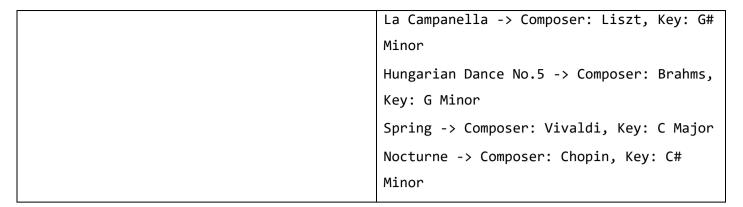












JS Examples

Input	Output
[Sonata No.2 by Chopin in B Minor added to
'3',	the collection!
'Fur Elise Beethoven A Minor',	Hungarian Rhapsody No.2 by Liszt in C#
'Moonlight Sonata Beethoven C#	Minor added to the collection!
Minor',	Fur Elise is already in the collection!
'Clair de Lune Debussy C# Minor',	Successfully removed Clair de Lune!
'Add Sonata No.2 Chopin B Minor',	Changed the key of Moonlight Sonata to C#
'Add Hungarian Rhapsody	Major!
No.2 Liszt C# Minor',	Fur Elise -> Composer: Beethoven, Key: A
'Add Fur Elise Beethoven C# Minor',	Minor
'Remove Clair de Lune',	Moonlight Sonata -> Composer: Beethoven,
'ChangeKey Moonlight Sonata C#	Key: C# Major
Major',	Sonata No.2 -> Composer: Chopin, Key: B
'Stop'	Minor
	Hungarian Rhapsody No.2 -> Composer: Liszt,
	Key: C# Minor

Comments

After we receive the initial pieces with their info, we start receiving commands. The first two commands are to add a piece to the collection, and since the pieces are not already added, we manage to add them. The third add command, however, attempts to add a piece, which is already in the collection, so we print a special message and don't add the piece. After that, we receive the remove command, and since the piece is in the collection, we remove it successfully.

Finally, the last command says to change the key of a piece. Since the key is present in the collection, we modify its key.



















We receive the Stop command, print the information about the pieces, and the program ends.

Input	Output
	Spring by Vivaldi in E Major added to the
'4',	collection!
'Eine kleine Nachtmusik Mozart G	Successfully removed The Marriage of
Major',	Figaro!
'La Campanella Liszt G# Minor',	Invalid operation! Turkish March does not
'The Marriage of Figaro Mozart G	exist in the collection.
Major',	Changed the key of Spring to C Major!
'Hungarian Dance No.5 Brahms G	Nocturne by Chopin in C# Minor added to the
Minor',	collection!
'Add Spring Vivaldi E Major',	Eine kleine Nachtmusik -> Composer: Mozart,
'Remove The Marriage of Figaro',	Key: G Major
'Remove Turkish March',	La Campanella -> Composer: Liszt, Key: G#
'ChangeKey Spring C Major',	Minor
'Add Nocturne Chopin C# Minor',	Hungarian Dance No.5 -> Composer: Brahms,
'Stop'	Key: G Minor
]	Spring -> Composer: Vivaldi, Key: C Major
	Nocturne -> Composer: Chopin, Key: C# Minor



