

Problem 2 – Gladiator Inventory

As a gladiator, Pesho has cool Inventory. He loves to buy new equipment. You are given Pesho's inventory with all of his equipment -> strings, separated by whitespace. Until you receive "**Fight!**" you will be receiving commands which Pesho does with his inventory.

You may receive the following commands:

- **Buy {equipment}**
- **Trash {equipment}**
- **Repair {equipment}**
- **Upgrade {equipment}-{upgrade}**

If you receive **Buy command**, you should **add** the equipment at last position in the inventory, but only if it isn't bought already.

If you receive **Trash command**, **delete** the equipment if it exists.

If you receive **Repair command**, you should **Repair** the equipment if it exists and place it on **last position**.

If you receive **Upgrade command**, you should check if the equipment exists and **insert** after it the upgrade in the following format: "{equipment}:{upgrade}";

Input / Constraints

You will receive input in several lines. Each line is a command:

- One the **first line**, you will receive Pesho's **inventory** – sequence of equipment names, separated by space.
- Each following line, until you receive "**Fight!**" will be a **command**.

Output

- As output you must print Pesho's **inventory**.

Constraints

- The **command will always be valid**.
- The **equipment** and **Upgrade** will be strings and will contain any character, except '-'.
- Allowed working **time / memory**: 100ms / 16MB.

Scroll down to see examples.

Examples

Input	Output	Comment
SWORD Shield Spear Buy Bag Trash Shield Repair Spear Upgrade SWORD-Steel Fight!	SWORD SWORD:Steel Bag Spear	We receive the inventory => SWORD, Shield, Spear We Buy Bag => SWORD, Shield, Spear, Bag Trash Shield => SWORD, Spear, Bag Repair Spear => SWORD, Bag, Spear We add Upgrade => SWORD, SWORD:Steel, Bag,Spear We print the inventory.
SWORD Shield Spear Trash Bow Repair Shield Upgrade Helmet-V Fight!	SWORD Spear Shield	