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 / Consrtaints

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

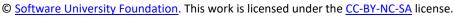
As output you must print Pesho's inventory.

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	













