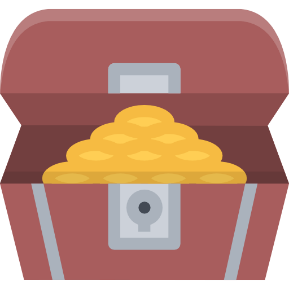
# Treasure Hunt



*The pirates need to carry a treasure chest safely back to the ship. Looting along the way.*

Create a program that **manages** the **state** of the **treasure chest** along the way.

On the **first line** you will receive the **initial loot** of the treasure chest, which is a **string** of **items** separated by a **'|'.**

**"{loot1}|{loot2}|{loot3}… {lootn}"**

The following lines represent commands **until** **"Yohoho!"** which ends the treasure hunt:

* **Loot {item1} {item2}…{itemn} –** pick up treasure loot along the way. Insert the items at the **beginning** of the chest. If an item is **already** contained **don't** insert it.
* **Drop {index} – remove** the loot at the given **position** and **add** it at the **end** of the treasure chest. If the index is **invalid** skip the command.
* **Steal {count} –** someone steals the **last count** loot items. If there are **less items** than the given count **remove as much** as there are. Print the stolen items separated by **', '**:

**{item1}, {item2}, {item3} … {itemcount}**

In the end output the **average treasure gain** which is the **sum** of all treasure items **length** divided by the **count** of all items inside the chest **formatted** to the **second decimal** point:

**"Average treasure gain: {averageGain} pirate credits."**

If the chest is **empty** print the following message:

**"Failed treasure hunt."**

## Input

* On the **1st line** you are going to receive the **initial treasure chest** (**loot** separated by **'|'**)
* On the next **lines**, until **"Yohoho!"**, you will be receiving commands.

## Output

* Print the output in the **format** **described** **above**.

## Constraints

* The **loot items** will be strings containing any ASCII code.
* The **indexes** will be integers in the range [**-200**…**200**]
* The **count** will be an integer in the range [**1**….**100**]

## Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| Gold|Silver|Bronze|Medallion|Cup  Loot Wood Gold Coins  Loot Silver Pistol  Drop 3  Steal 3  Yohoho! | Medallion, Cup, Gold  Average treasure gain: 5.40 pirate credits.  Pistol|Coins|Wood|Silver|Bronze|Medallion|Cup|Gold |
| **Comments** | |
| The first command **"Loot Wood Gold Coins"** adds **Wood** and **Coins** to the chest but **omits** Gold since it is already contained. The chest now has the following items:  **Coins Wood Gold Silver Bronze Medallion Cup**  The **second** command adds **only Pistol** to the chest  The **third** command **"Drop 3"** removes the **Gold** from the chest, but immediately adds it at the **end**:  **Pistol Coins Wood Silver Bronze Medallion Cup Gold**  The **fourth** command **"Steal 3"** removes the **last 3** items **Medallion**, **Cup**, **Gold** from the chest and prints them.  In the end calculate the average treasure gain which is the sum of all items length Pistol(**6**) + Coins(**5**) + Wood(**4**) + Silver(**6**) + Bronze(**6**) = **27** and **divide** it by the count 27 / 5 = **5.4** and format it to the **second decimal** point. | |
| **Input Output** | |
| Diamonds|Silver|Shotgun|Gold  Loot Silver Medals Coal  Drop -1  Drop 1  Steal 6  Yohoho! | Coal, Diamonds, Silver, Shotgun, Gold, Medals  Failed treasure hunt. |