Problem 3 - Moving Target

Problem for exam preparation for the [Programming Fundamentals Course @SoftUni](https://softuni.bg).
Submit your solutions in the SoftUni judge system at https://judge.softuni.org/Contests/Practice/Index/2305#2.

You are at the shooting gallery again, and you need a program that helps you keep track of moving targets. On the first line, you will receive a **sequence of targets with their integer values**, split by a **single space**. Then, you will start receiving **commands for manipulating the targets** until the **"End"** command. The commands are the following:

- **"Shoot {index} {power}"**
  - Shoot the target at the index **if it exists** by **reducing** its **value** by the **given power** (**integer value**).
  - Remove the target **if it is shot**. A target is considered **shot** when **its value reaches 0**.
- **"Add {index} {value}"**
  - Insert a target with the received value at the received **index if it exists**.
  - If not, print: **"Invalid placement!"**
- **"Strike {index} {radius}"**
  - **Remove** the target at the given **index** and **the ones before and after it** depending on the **radius**.
  - If **any of the indices** in the range is **invalid**, print: **"Strike missed!"** and **skip** this command.

Example: "Strike 2 2"

	{radius}	{radius}	{strikeIndex}	{radius}	{radius}		

- **"End"**
  - **Print** the sequence with targets in the following format and **end the program**:
    "{target$_1$}|{target$_2$}…|{target$_n$}"

Input / Constraints

- On the **first line,** you will receive **the sequence of targets** – **integer values [1-10000]**.
- On the **following lines,** until the **"End"** will be receiving the command described above – **strings**.
- There will never be a case when the **"Strike"** command would empty the whole sequence.

Output

- Print the appropriate message in case of any command if necessary.
- In the end, print the sequence of targets in the format described above.

Examples

Input	Output	Comments
52 74 23 44 96 110 Shoot 5 10 Shoot 1 80 Strike 2 1 Add 22 3 End	Invalid placement! 52|100	The first command is "**Shoot**", so we reduce the target on **index 5**, which is valid, with the given **power** – **10**. Then we receive the same command, but we need to reduce the target on the 1st index, with power 80. The value of this target is 74, so it is considered shot, and we **remove** it. Then we receive the "**Strike**" command on the 2nd index, and we need to check if the range with radius 1 is valid: **52 23 44 96 100**

		And it is, so we **remove** the targets. At last, we receive the "**Add**" command, but the index is **invalid**, so we print the appropriate **message**, and in the end, we have the following result: **52|100**
1 2 3 4 5 Strike 0 1 End	Strike missed! 1|2|3|4|5	

JS Examples

Input	Output	Comments
(["52 74 23 44 96 110", "Shoot 5 10", "Shoot 1 80", "Strike 2 1", "Add 22 3", "End"])	Invalid placement! 52|100	The first command is "**Shoot**", so we reduce the target on **index 5**, which is valid, with the given **power** – **10**. Then we receive the same command, but we need to reduce the target on the 1st index, with power 80. The value of this target is 74, so it is considered shot, and we **remove** it. Then we receive the "**Strike**" command on the 2nd index, and we need to check if the range with radius 1 is valid: **52 23 44 96 100** And it is, so we **remove** the targets. At last, we receive the "**Add**" command, but the index is **invalid**, so we print the appropriate **message**, and in the end, we have the following result: **52|100**
(["1 2 3 4 5", "Strike 0 1", "End"])	Strike missed! 1|2|3|4|5	