
Filling the bag

P63183_en

Ali Baba is hidden in the cave of the treasure, watching how the forty thieves leave and take away jewels all the time. When the thieves will depart, Ali Baba will fill his bag with the most valuable jewels, but he will have to make it quickly, so that they cannot catch him. Therefore, at every moment he wants to know which are the jewels that he will have to take when he has the opportunity. Help him!

Input

Input start with $n > 0$, the number of jewels that fit in the bag. Follow several actions of the thieves, one per line: If they leave a jewel, there is the word "leave" followed by its value. If they take a jewel, there is the word "take" followed by its value. The values of the jewels are natural numbers, all different.

Output

Print a line for each action of the thieves, with the maximum value of the jewels that Ali Baba could take if the thieves left at that moment.

Sample input

```
3
leave 1000
leave 100
leave 400
leave 2000
take 1000
leave 50
leave 3000
take 100
take 2000
leave 1500
take 400
take 1500
```

Sample output

```
1000
1100
1500
3400
2500
2500
5400
5400
3450
4900
4550
3050
```

Problem information

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Generation : 2024-05-02 20:55:38

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